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AND

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AMERICAN RAILROAD JOURNAL.

PUBLISHED AT 105 CHESTNUT ST. PHILADELPHIA.

Saturday, September 2, 1848.

Lafayette and Indianapolis Railroad.

We desire to call the attention of contractors to the notice from this company on another page. This is the commencement of construction in that part of the State, but not the last by many a mile. That region of country will be chequered by railroads in a few years.

For the American Railroad Journal.

Pennsylvania Railroad.

In your notice of the Allegheny subscription, in the last number of the Journal, you state that the railroad company is to pay an interest on their subscription till the road is finished, which appears to lead to the conclusion that the directors have made a special bargain with this county, which other stockholders do not participate in. The company agree to pay to all stockholders six per cent. interest till the road is finished, and are now paying that interest to the city of Philadelphia, and the private holders. In this case, as a matter of convenience, the company pay the Allegheny coupons at their office in Philadelphia, and liquidate the interest on their stock held by that county by passing over the coupons when paid. The company propose to make the same arrangement with the city of Philadelphia.

The notice referred to, by the writer of the above communication, was taken from the Pittsburg Gazette, and credited to that paper. We ought, however, to have added, that the company pay interest to *all* their shareholders, the same as to Allegheny county, but it did not occur to us at the moment of preparing the item.

ENGLISH RAILWAY STATISTICS.

We find in the Civil Engineer and Architects' Journal, for August, a very interesting article on the Railway Statistics of England for 1846 and 1847, which we shall give in our next. It shows the great and increasing benefits of railways to the people of cities and large towns, as well as to those remote from cities. They not only enable those pent up in large cities to take *fresh air*, but also to get good fresh meat, from the distance of *hundreds* of miles, in a few hours.

Camden and Amboy Railroad Co.

And their Address to the people of New Jersey.

We have felt frequently called upon, in times past, to speak plainly in relation to the management of this company, and therefore, when they put forth a reply, or justification of their course, to the people of New Jersey, and the public, we gave it a place in the Journal, without comment or accompaniment—though we had, at the time, an article in type—that our readers might form their own opinions of its merits. That address has now been before the public several weeks, published in numerous papers in this city and New Jersey, at the cost of *hundreds* of dollars—not published in a single paper, however, we hazard little in saying, *except this Journal*, without being paid for—and we shall now partially redeem our promise to call attention to some of its assertions, and assumptions.

It is certainly very true, as they say, that "the thousands who have sacrificed fortunes in schemes of public improvement, are rembered only, if at all, with pity;" and it is equally true, that "those who have been successful" in similar schemes, and have, *in their success*, and power, forgotten right, truth and justice towards those by whom they are supported, are regarded with any other than feelings of gratitude or respect—though we are not satisfied that "envy" predominates.

If those who enjoy the advantages of these works "had none of the risk of their construction, and none of the toil,"—they, or many of them, have had both *risk*, and *toil*, in the construction of *other* works, equally important, and that, too, where the *risk* and *toil* were far greater, and more hazardous, and therefore at least *they* have, if others have not, the right to complain, when they are charged *double* price for what they do, in their sphere, at reasonable rates. And if it is true, as the managers say, of those who complain, that "it costs nothing to find fault," it is equally true, it appears to us, that, however *well grounded* the complaints may be, in relation to them, it is quite *useless* to complain, as there is seldom any one present who has the ability, or disposition, to remove causes of complaint.

The writer of the address says the companies "might comprise their address in terms of exceeding brevity: *they might lay their hands upon their charters and say, these are the statutes of a sovereign State—we are her citizens—she knows how to preserve her laws inviolate—she never falters in her duty to her sons.*"

No person denies to the State of New Jersey the ability to protect her citizens—but there are many who deny to a *few* of the citizens of New Jersey—under "*their charters*"—the right to extort from the citizens of other States, large amounts of money annually, which their charters expressly prohibit them from demanding.

There may possibly be a *lapse* in the wording of the charter for the railroad, by which legal ingenuity may make out a case—but there is not *one* disinterested person in a thousand, as we believe, who would not say, on reading the charter, and its amendments, that it was the *intention* of the legislature to fix the rate of passage at not to *exceed three* dollars, from city to city, and of freight at not to *exceed* 8 *cents per ton per mile* between the same points—and at corresponding rates for intermediate distances. Yet the company has, for years, disregarded the obvious intentions of the legislature, and the plain reading of the charter—charging such rates for freight as suited themselves; and disregarding all system, and uniformity of rates of fare on their roads—charging the *through* passenger, on one line, much higher per mile than the way passenger, and on a part of the other line, the *way* passenger higher than the through. And to another, and more *favored* class, issuing commutation tickets, which enables the holder to travel at little more than *half* what another, on the same seat with him, is charged on certain sections of the road. This reversing, on one road, the usual order of management; and this complicated, unequal and partial mode of charging passengers in the same car, for similar accommodation, tends to irritate the public mind, and cause a general reproach to be cast upon a system, the success of which depends upon public opinion, and legislative enactment.

It is very true that the railroad company shouldered—for the time being—a heavy load, in agreeing to build the canal; they did it, however, in accordance with the far reaching sagacity for which, at that time, some of the prominent promoters of the

work were distinguished. It was plain to them that it would be policy to assume, and carry, even *that* load—*having* the control of the *railroad* communication—rather than to risk its being made by another company—as it was sure to be if the railroad company charged even their allowed 8 cents per ton per mile. It is therefore pretty evident that the *patriotism* of the company, in this matter, was much on a par with that of the parties alluded to in the address, when speaking of those who attempted to lay down rails on the old turnpike between Trenton and New Brunswick; nor was there much more patriotism in their offer "to *surrender all their privileges*, and convey the canal and railroad to the State" —in consequence of the "agitation among the people on the new route"—when it was *well known*, by those who made the offer, that "the legislature considered the State policy wisely settled," *not* to enter into the construction of railroads and canals.

In consequence of the demands of the people for a road from Trenton to New Brunswick, the joint companies agree to build it. And thus they open a second line between the two largest cities in the Union, but on this line they assume to charge *four* dollars—a rate of charge for which we find no authority in their charter—nor in the usages of American railroad management, where the best interests of the shareholders, and the business community, are apparently consulted. They say, in their address, that "the agitators of 1848 want a fourth *route*; and in *proportion to the outlay*, will, as heretofore, be the increase of price." Of course it would increase the price if they were to control it; not so, however, if it were constructed and managed by other parties.

This company cannot well avoid paying some deference to the "newspaper writers," even though they seem not to appreciate them very highly, judging from the following extract, in which they say: "the charges which have been made by newspaper writers against the joint companies, may be entitled to some notice, not out of respect to those who *write*, but with regard to the public who *read* them, and who, having no opportunity to judge of their truth or falsehood, are liable to be innocently misled.—The directors of the joint companies, therefore, upon their personal responsibility, submit to the stockholders and to the public, the following statements: The Camden and Amboy company charges, between Philadelphia and New York, in their first class cars, $3; and in their second class cars, $2 50, and run one line between the cities as low as $2 25, making the average price for through passengers, $2 58."

They also say in relation to the charges for freight that "by the tables it will be seen that the average price of *freight* between New York and Philadelphia by the Delaware and Raritan canal and Camden and Amboy railroad, *is one cent and twenty-nine hundredths of a cent, or a little more than one cent and one-quarter of a cent per ton per mile*; while the average freights on one hundred and seventeen railroads and branches in 20 different states in the Union, is seven cents and fifty-six hundredths of a cent per ton per mile, or more than six times higher than the freight on the canal and railroad; and, although it would seem that the freights on the railroad are nominally higher than on the canal, yet still it will be seen that they are not one half as high, in proportion to the value of the articles transported on these different routes belonging to the same companies."

The italics in this extract are ours, as we wish to call attention to the apparent disposition to throw "dust in the eyes" of "the public who read" the articles of the newspaper writers, but who, "having no opportunity to judge of their tuth or falsehood, are liable to be misled." The plan here resorted to of *averaging* the different rates of fare, of the different passengers, and of averaging the rates of freight on *coal*, *lime*, *iron*, *grain* and merchandise, carried on the canal, with what is carried on the railroad, and thus to show that their rates are only 1·29 cents per ton per mile, "while the *average* on 117 railroads and branches, in 20 different States in the Union, is *over seven and a half cents* per ton per mile," is worthy of its source, and in accordance with the ingenuity of those who manage these companies. Upon this part of the address we shall only say that we have seen a list of the bills of one merchant in this city, numbering over *two hundred*, for one year, the freight paid on which amounted to about *twelve hundred* dollars, of which *nearly one-third was illegal*, being the *excess* over and above the "eight cents per ton per mile," allowed by their charter—or averaging nearly *twelve* cents per ton per mile—including "cooperage."

If other merchants have paid similar rates, it will require some ingenuity to convince them that they have paid only an average of 1·29 cents per ton per mile.

That many unnecessary, and even *unjust* complaints have been made against the companies we have no doubt; yet even *that* is no reason why the company should make illegal charges, and then attempt to cover them over, and mislead the people, by putting forth such statements as that in relation to the "average rates of freight," as compared with other railroads in this country. It is neither just nor dignified.

We have not attempted to follow the address carefully, and expose all its sophistries, prefering to touch upon the prominent points at this time, and leave the others for another day.

Locomotives for Inclined Planes.

Less than twenty years ago the ablest engineers of Europe were content to get a locomotive engine for the Liverpool and Manchester railroad which would haul after it four times its own weight upon a level railroad, at the rate of *ten miles an hour!* and that weight must *not exceed five tons* with its water aboard!! and at *that* period, grades exceeding 35 to 40 feet, were deemed *entirely* objectionable, and inadmissible, where locomotive power was to be used!!! But at this time grades of 60 to 80 feet are worked upon several of our most important railroads, by locomotives of *fifteen* to *twenty-five* tons weight, which haul over these grades ten to fifteen times their weight, and upon a level from seven hundred to a *thousand* tons with ease. This astonishing improvement, however, does not answer the requirements of the present age—*much more than this* must be accomplished to render railroads as useful as they are destined to be in this country, as well as in Europe. We do not mean by these remarks that it is important to haul greater loads on level roads than is now done—nor do we think it desirable on most of our American roads to haul, as a common thing, loads to exceed 300 to 400 tons, as engines that have *weight* to do more than that, are very destructive to the roads—but what we *do* want is a *plan* of locomotive, and railroad, which will enable an engine to haul its *ordinary* load on the more level portions of the road, over any grade ranging from *one hundred* to *two hundred and fifty* feet in the mile—should it be *necessary* to surmount such grades in carrying out any important line, either of main, or *branch* railroads. With such an improvement, it will readily be seen that the railroad system will become much more general and useful than it can possibly be as now used, as it will then be extended into regions of country now deemed entirely inaccessible to them. That such improvements will be made, and indeed, *are already made*, we have good reason to believe, as may be seen by reading an article in this days' Journal in relation to the engine of Mr. Sellers, of Cincinnati, which has been exhibited for some time past in New York, to which we would call the attention of engineers and railroad companies.

India Rubber Springs for Railroad Cars.

We have in several instances called attention to this subject, as we have deemed it one of interest to railroad companies, and of comfort to travellers;—and we are now able to give the opinions of several gentlemen who have had experience, and who are every way competent to speak of their value.

The following article, from the pen of Mr HALE, the president of the Boston and Worcester railroad, expresses his opinion of this important improvement, as published in the Boston Daily Advertiser of June 7, 1848. He says:

"Of the numerous uses to which the wonderful elasticity and durability of India Rubber renders this material applicable, we are hardly aware of one in which it has been more successful than in forming springs for railroad cars. We have had occasion to observe, for some months past, its application to this use, on one of the passenger cars on the Newton special train of the Boston and Worcester railroad. It is there used, not only for the springs on which the car rests, but for the springs attached to the draw bar at each end of the car, to prevent any jar on the sudden advancement or interruption of the motion of the car. For both these purposes it appears to be admirably adapted, and we do not learn, that during the period in which it has been used, any defect in it has been discovered. It renders the movements of the car extremely easy, and protects it more effectually, we think, than any other spring which we have ever seen in use, from every harsh or unpleasant motion, either vertical or horizontal. It is simple in its form and application, extremely light, and little liable to get out of repair. During the period of some months, in which we have seen the springs in operation, there is no apparent wear or diminution of their efficiency."

The above statement of Mr. Hale agrees with my own observation in all particulars.

WM. PARKER, Supt. B. & W. R. R.

June 8, 1848.

I fully concur in the foregoing statement, from practical observation of its use for the last 5 months, on the Boston and Worcester railroad corporation cars.

D. N. PICKERING, Jr.,
Supt. Car Building B. &. W. R. R.

Boston, June 10, 1848.

The New England Car Company have introduced their Vulcanized India Rubber Car Springs on the roads with which we are respectively connected, and we fully concur with Mr. Hale in the above opinion of their character and properties.

DAVENPORT & BRIDGES, Car Builders.
BRADLEY & RICE, Car Builders.

We cheerfully give place to the above opinions, and would ask attention to the advertisement of the New England Car Company, which will be found in this number of the Journal.

RAILROAD RECEIPTS FOR 1847 AND 1848.

There has been some apprehension, among some of those interested, that the railroad traffic for 1848 will not equal that of 1847—but we do not think there is just grounds for such apprehension. It is true that there may not be as great an increase on some roads as was anticipated, or hoped. Yet that there will be a large increase on the railroads of *this* and *other* countries, we have not a doubt.

On the Western Massachusetts road there has been a fair increase in passenger traffic, but a

falling off in freight, which gives them a total increase of only $20,230, for seven months, to 1st August, as compared with last year—but it will be found that other roads have increased in a much greater ratio upon the last year's business.

The Long Island road shows the following statement, viz:

Its receipts in the first seven months of			
1847, were, for passengers...	$52,197 94		
" " freight.....	20,010 64		
			$72,208 55
1848, " passengers...	59,160 32		
" " freight.....	24,604 68		
			83,765 00

Showing an increase of 16 per cent., or $11,556 45

And the New York and Erie railroad gives the following result, viz:

1347, to 1st Aug., passengers.	$51,074 39		
" " freight....	86,198 86		
			$137,273 25
1848, " passengers.	72,094 31		
" " freight....	96,789 15		
			168,883 46

Showing an increase of about 23 pr ct. or $31,610 21

We also understand that on the South Carolina roads there has been a large increate in the traffic.

The business of the month of July on those roads was as follows, viz:

1847, passengers.....	$13,096 77		
freight and mails.....	17,833 49		
			$30,930 26
1848, passengers.....	17,031 07		
freight and mails.....	26,933 52		
			43,964 59

Showing an increase of over 40 pr ct. or $13,034 33

We hope soon to be able to give the statement for the eight months up to 1st inst., of the business on several of the southern roads, by way of showing that there is a steady and healthy gain in the receipts on the American as well as English railroads, this year as compared with last.

Correction of Rates of Fare.

To the Editor of the American Railroad Journal:

Sir: I write to call you attention to a strange error in your table of "Railroad Freight and Fares," in regard to one of the railroads in this State, from which it would appear that the rate per mile of fare on it is *less* than it is on any of the others, when in reality it is greater than the rates on all except one.

Your table says, "Richmond, Va., to Washington city, 133 miles," etc. Richmond, Va., to Washington city, is composed of 74 miles of railroad, and about 50 of steamboat navigation. The fare is $5 50 to Washington city, as you set it down, but take out the steamboat company's portion of it, (one-fourth) it gives a rate of 5·58 cents per mile for the railroad, instead of "4·13," the rate given in the table.

I observe also an error in the rate of fare per mile on the Richmond and Petersburg road. It is 4·44 cents per mile, and not "4·34," as stated in the table.

I remain yours respectfully,

H. D. Bian.

Petersburg, Va., August 11, 1848.

We give place to the above communication, and are obliged to the writer for the opportunity, because we desire to correct any error into which we may have fallen, as to distance, or *rates per mile*—with the remark that we considered the line from Washington to Richmond as one stage, or one payment for through passengers, as from Philadelphia to New York, by the railroad to South Amboy, and then by steamboat to New York—or from New York to Norwich, or Stonington, or Providence, or Fall River, by steamboat, and thence to Boston by railroad.—The object was to give the comparative rates of charge for relative distances, and if we have made an error in the distance from Washington to Richmond, of nine miles, it will vary the rate per mile from 4·13 to 4·43. If it was customary to pay a fare on the boat, and another on the railroad, we should have so given it, then each would have shown for itself; but it is not, and therefore we gave it as one stage.

The error in the rate of the Richmond and Petersburg railroad is typographical—it should be 4·44.

Sellers' Locomotive for Inclined Planes.

We accidentally witnessed some interesting experiments, when in New York a few days since, with a model locomotive engine, designed to show the practicability of taking any load over grades of *one* or *two hundred* feet to the mile, with a locomotive, which it will take on a level road; and thus, reduce immensely, the cost of constructing railroads. Various plans have been heretofore devised to effect this object, but none that have been deemed adequate to the object in view, as no one of them has been introduced into use.

This plan has been invented, and the model brought out, by *Mr. Geo. E. Sellers*, of Cincinnati, Ohio—formerly of this city, and at one time engaged in the manufacture of locomotives. The great, and vastly important objects designed, and believed to be attained by it, are to allow of the use of *lighter* engines upon railroads, which shall be *more powerful* on *high grades* than the heavy engine now is and thus to avoid, to a very considerable extent, the rapid destruction of railroads by heavy machinery.

It is not always quite safe, we are aware, to form opinions of machinery on a large scale, and to decide important questions of practical utility, upon the working of model machines; yet we were led to examine this machine, and its operations, with some care, as it moved backward and forward on the level portion of the road, laid down for the experiment, and upward and downward on the grade of 276 feet in the mile; and we were deeply impressed with the opinion that it is destined to exercise a powerful influence in aid of the *extension* of railroads in this country. The statement of one fact—*if it be a fact*, and we do not doubt in the least—will, we think, convince most persons that it will give a new impulse to, and rapid extension of, the railroad interest especially in this country. We were led, by its performance, to believe that a locomotive on this plan, upon a road built, as designed, for its use, with a middle rail on grades, and at the ordinary stopping places, will start a train of cars, and take them over grades of 100 to 200 feet in the mile, which it cannot haul, at a profitable speed, even if at all, *on a level road*. This is a bold and startling assertion; an assertion, however, which will be fully verified, if we may safely draw inferences from *these model facts* to practical machines.

The arrangement of the *additional* machinery of this model is such that, when put in operation, the adhesion upon the centre rail is in proportion to the *gravity of the entire train of cars*—instead of the *weight* of the *locomotive*; and the beauty of its operation is, that this application of increased power does not add to the wear or injury of the road:—as it is brought to bear on the *sides* of the *centre* rail, instead of on the top of the ordinary, rails. It has another important feature, of great value, in its ability to descend high grades with entire safety, and to arrest and reverse its movement, and ascend or descend at pleasure with its load, on any grade upon which it is designed to work.

We heard it suggested by a gentleman present that the surging of the engine sidewise, when in contact with the centre rail, would be likely to remove it from its position; but this objection has been guarded against by the inventor, as will be seen on reading the annexed more full description.

Mr. Sellers has also provided a "safety brake" for the cars, in case of their disconnection on high grades, which will effectually prevent accidents, as it arrests their descent before they acquire momentum. We saw the experiment tried with entire success on a grade of 276 feet in a mile; and the moment the car parted from the engine the brake fell, and clutched the *centre* rail, and held it until the engine backed down and took it again in tow.

Not satisfied with a single examination, we returned again the next day for the purpose of verifying, or discarding, our first impressions, and the result was a full confirmation of them.

There are probably some practical difficulties to be obviated, though we are unable to point them out—yet we have little fear but that the mind which has accomplished so much—or some other equally ingenious—will remove them.

We would call the attention of the South Carolina railroad company to this plan, as a means of working their inclined plane—and other railroad companies who have heavy planes, or grades, to overcome—as it may be well worth their attention to understand it before it passes into other hands.

Partial Description of Sellers' Locomotive.

The object of this invention is to obtain the requisite adhesion to enable the locomotive engine, with its train of cars, to ascend and descend grades much heavier than are now adopted, with safety and certainty; and thus to avoid expensive grading, and circuitous routes, for important lines; and also to enable the engine to employ the full force of the steam generated in the boiler, notwithstanding the reduced speed of the train whilst ascending heavy grades.

The first part of the invention consists in the addition to a locomotive—similar to those now in use, and of sufficient weight to draw their allotted loads upon the level road—of appliances for employing the gravitating force of the *train of cars*, either in ascending or descending heavy *grades*, and to produce the adhesion in such manner as that it will increase in proportion to the inclination of the grade, and the weight of the train. This is effected by connecting the train with horizontal gripping wheels on the locomotive, which embrace the *sides* of a *centre rail* which is located on that part of the road only where there are high grades, and at the usual stopping places where the side rails, from frequent oiling of the trains, are liable to be greasy.

The *gripping* wheels, on ascending or descending heavy grades, and in stopping or starting the trains, become *driving* wheels, by having their bearings in *levers* connected together by opposing *toggle joints*, which are operated upon by the connecting link of the train, so that in starting, or ascending a high grade, the gravity, or resistance of the train, operates on one of the toggles, and thereby causes the wheels to grip the centre rail, with a force proportioned to the gravitating force to be overcome; and in descending heavy grades, the connecting link acts upon the other toggle, and produces a like effect. These gripping wheels are driven by an *auxiliary pair of cylinders*—placed below the ordinary cylinders—of such capacity as effectually to work off in conjunction with the ordinary cylinders, the steam generated in the boiler during the retarded motion of the train on the grade.

It is a fact, we believe, familiar to most engineers, that the greatest power is required in starting, and attaining full speed; and that a comparatively small power is necessary to maintain the speed when once attained, whether upon the level or on the grade—the *vis inertiæ* requiring to be overcome in both cases. It is an equally familiar fact that, on a heavy grade, greater power is required to draw a given load than on a level; and of course where the same driving wheels are used, the number of revolutions per minute, and the speed of the train, must be diminished in proportion to the increased resistance of the gravity of the train. This diminution in the speed of the locomotive, is found to be very prejudicial to the generation and advantageous consumption of steam, the slowness of the exhaust causing a diminished draft in the smoke pipe, and consequently a diminished generation of steam: while, on the other hand, it is found that engines working at a quick speed, with properly adjusted valves, will exert much more power than at slow speeds; whilst at the same time their rapid exhaust produces a powerful draft, highly favorable to the generation of an adequate quantity of steam.

By using horizontal driving wheels, acting upon a central rail, having a reduced diameter compared with the ordinary driving wheels, it is evident that their diminished leverage, enables the engines which drive them to perform the usual number of revolutions per minute, the speed of the train being diminished in proportion to the respective diameters of the two sets of driving wheels. Thus, if we suppose the ordinary drivers, and the horizontal ones to bear the proportions of three to one, their respective engines being of equal capacities, it is evident that at the same number of revolutions per minute one set of wheels will draw a load three times as great as the other, and at one third the speed.

The second part of the invention consists in connecting the levers of the gripping wheels with a steam or other spring, in such manner as that its elasticity shall cause the wheels to grip the central rail, and thus enable the locomotive to ascend and descend the grades without a train, or with a train which is too light to produce the requisite adhesion, or in the event of any accident which might prevent the gravitating force from effecting this end.

The third part relates to a self-acting brake which is intended to prevent accidents, in the event of the breaking or separating of the links by which the respective parts of the train are connected together.—This brake consists of a pair of "grippers," or "tongs,"—similar to those used on draw-benches—which are suspended over the central rail, underneath each car, and so connected, by a rod and chain, to the car in advance, as that, in the event of the disconnection of any car, they are let fall and *take hold upon the central rail*, gripping it with a force proportioned to the gravitating tendency of the car. Their action is so instantaneous that the car is stopped and held fast before it has acquired any momentum.

With regard to the adhesion of the locomotive, it will be seen from the foregoing description that the adhesion to the central rail is produced independently of the weight of the engine, and by the proper adjustment of the parts is rendered adequate to the full effective power of the steam, beyond which point an adhesion is entirely useless and prejudicial. If the driving wheels can be prevented from sliding or slipping on the rails the *desideratum* is obtained.

When this point is attained, or attempted to be attained, by increasing the weight of the locomotive, the wear and strain upon the road, and the engines themselves, as well as safety to the bridges and embankments, present an insurmountable barrier—or limit the load to be drawn in a single train: to say nothing of the amount of fuel and power expended in carrying back and forth an enormous and unproductive load, when the object can be attained by other means.

The position of the central rail, and the manner of gripping it, are worthy of consideration. The central rail is fastened to timbers laid upon the cross ties of the track, and is elevated somewhat above the side tracks; which is of advantage in case of snow. As the horizontal driving wheels act upon the opposite sides of the central rail, and as these sides are perpendicular, they are not liable to hold dust, water, ice or grease; objects of no trifling magnitude to regular, successful and profitable trips.—Ice that may be formed upon the rail, will, by the motion of the train, be thrown off and fall out of the way.

In short, it is thus proposed by this arrangement, to use engines of as light weight as will be sufficient to carry their trains upon the level parts, and lighter grades, of the roads; and to produce the requisite adhesion for starting and stopping the trains, and carrying them over the grades by means *independent of the weight of the locomotive.*

There is an arrangment for allowing the engine lateral play, on the side rails, while the gripping wheels are acting on the central rail, to prevent surging upon it, and forcing it from its place, and also to allow for any inequalities in the rails, which will remedy that difficulty. This is a very important part of the machine, and well arranged, but it cannot be well described here.

We are fully aware that we are exposing ourselves to remark, perhaps censure, perhaps *ridicule*, by giving these opinions, but we can only say in reply that the same things occurred on the first publication of this Journal, in January, 1832. It was then said by very wise and discrete men, that locomotive engines could only be used on grades of 35 to 40 feet per mile, and that railroads could never compete successfully with canals; yet we find that grades of over 80 feet are in common use, and that no new canals are built—and that in England several canals have been converted into railroads—and also that, in this country, they not only compete successfully with canals, but are destined to compete—*and successfully, too*—with the *best river navigation in the world*—and that too, under the advice and direction of one of the oldest, ablest, and most devoted *canal engineers* in the country.

We have witnessed, and closely observed, these changes in systems and opinions during the last sixteen years, and are prepared for, and have been looking for, some important and *striking improvements* in the machinery and management of railroads—by which *economy, safety* and *certainty* will be promoted, and that thereby a new impulse, and increased utility, will be given to the system.—Great powers of mind, and large amounts of capital, have been, for years, directed to this point, and we are quite sure that important results will follow—it may be immediately, or more remote, but it is sure to follow at an early day—and we have no hesitation to say that, *in our opinion*, Mr. Sellers has made an improvement which will be of vast utility—one which will contribute largely to the safety of passengers, and success of the proprietors of railroads, and that it deserves the early, candid and intelligent investigation of engineers and railroad managers of every part of the country where heavy grades are a prevention of, or obstruction to, railroads;—and when they shall have investigated the subject, and find that we have been misled, we shall be obliged to them to furnish us with the result of their observations for publication in the Journal, as *truth*, not pride of opinion, or private friendship, or personal interest, is its aim and object.

[From the Philadelphia "Commercial List."]

Pennsylvania Coal Trade for 1848.

From the Lehigh Mines.

The amount of coal shipped from the Lehigh mines during the week ending the 19th inst., and since the opening of the navigation, has been as follows:

	This week. tons.	Total this year—tons.
By Lehigh company, Aug. 22.	7,416 14..	142,729 09
By Room Run ..... "	3,845 12..	72,702 05
By Hazleton.....	1,936 00..	56,845 00
By Beaver Meadow.....	2,503 14..	49,358 02
By Spring Mountain.....	2,283 08..	43,525 08
By Buck Mountain.....	3,392 02..	38,965 18
By Cranberry Mines.....	.....	7,880 00
White Haven.....	557 19..	5,490 15
Sugar Loaf.....	192 10..	192 18
Total.....	21,125 13.	389,687 08

From the Schuylkill Mines.

The amount of coal forwarded by Reading railroad during the week ending the 24th inst., and since the 1st of January, has been as follows—

	Tons.
From Schuylkill Haven.....	10,698 02
" Pottsville	5,139 01
" Port Carbon.....	8,595 08
" Port Clinton.....	3,097 04
Total this week.....	27,530 15
Total this year.....	827,796 09

The amount of coal brought to market by the Schuylkill canal during the week ending the 24th inst., and since the opening of the canal, has been as follows:—

	Tons.
From Pottsville and Port Carbon.....	8,746 10
" Schuylkill Haven.....	4,193 02
" Port Clinton.....	826 16
Total this week.....	13,766 08
Total this year.....	261,014 07

Recapitulation.—Total Shipments this Season.

By Lehigh companies.....	416,889 15
By Reading railroad.....	827,796 09
By Schuylkill canal.....	261,014 07
By Delaware and Hudson canal.....	244,649 00
Total.....	1,750,349 01

Ten Wheel Locomotives.—New York and Erie Railroad.

We referred, in a previous number, to a locomotive in the shop of Messrs. Rogers, Ketchum & Grosvenor, at Patterson, designed for this railroad—we afterwards witnessed its performance on its trial trip, on the 7th July—at Piermont—and should have sooner referred to it, but have waited for the details, which have but recently reached us. We now give them entire, as follows, viz:—

"The New York and Erie railroad company's locomotive, Susquehanna, or No. 12, has ten wheels, six of them drivers, and four in a truck.

The drivers are connected by rods in the usual manner on the outside, and have flanges on all their tires. The piston rods connect with inside cranks on the shaft of the middle drivers. This engine traverses the shortest curves with the freedom of an ordinary six wheeled engine. The cylinders are 17 inches diameter. The stroke 22 inches. Diameter of drivers 5 feet. The area of heating surface in fire box 67 square feet; in tubes 944 square feet. The whole weight of engine 58,000 pounds, or 26 gross tons *nearly*. Weight of drivers 42,300 pounds, or 19 tons *nearly*. Weight on each driver 7,050 pounds, or 3 tons 3 cwt.

The trial trips on the 7th of July were made from

the pier at Piermont to Blauveltville, 4¼ miles. The time was noted between the 3d and 4th mile post. The rise of the grade in this mile is 60·72 feet, and the whole curvature 60¼ degrees.

Near midway of this mile is a curve of 4 degrees per 100 feet, or of a radius of 1432 feet.

This curve extends about 1000 feet upon a grade rising 15·05 feet in 1300 feet, or at the rate of 61·12 feet per mile.

PERFORMANCE JULY 7th, 1848.

			Tons.
1st Trip.—Useful load	326,360 lbs.,	or 163	360-2000
Cars	161,180	" 80	1180-2000
Engine and tender	92,300	" 46	300-2000
Total	579,840	" 289	1840-2000

Time between the 3d and 4th mile posts 10 minutes, or at the rate of 6 miles per hour. Nearly stopped in curve for want of adhesion. Steam blowing off 95 pounds, by the balance.

2d Trip.		Tons.
Useful load	220,500 lbs., or 110	500-2000
Cars	115,130 " 57	1130-2000
Engine and tender	92,300 " 46	300-2000
Total	427,930 " 213	1930-2000

Time between the two mile posts 4 minutes, or 15 miles per hour.

3d Trip.		Tons.
Useful load	300,700 lbs., or 150	700-2000
Cars	152,580 " 76	580-2000
Engine and tender	92,300 " 46	300-2000
Total	545,580 " 272	1580-2000

Time between the 3d and 4th mile post 5¼ minutes, or at the rate of 10¼ miles per hour.

An examination of the foregoing results will show very little, if any, loss of power in this engine, arising from the peculiarity of its construction.

The theoretical power given out at the rails on the first trip is 10,066, without any correction for condensation, etc., etc.

The resistance due to the gravity alone, of the trains, is 6,712 pounds, which is equal to the addition of 939 136-2000 tons upon a level, reckoning the friction of the cars at 8 pounds per ton, gross. The gross load, then, was equivalent to 1,229 840-2000 tons upon a level, or 1,201 380-2000 tons, exclusive of the engine.

The resistance of 1,201 380-2000 tons caused by the friction of the carriages at 8 pounds per ton, gross, is 8,580 pounds.

The friction of the engine at 15 pounds per ton, gross, of itself, and 1 pound per ton of its load, would in this case be 1,460 pounds, making the total resistance 10,040 pounds, exclusive of the resistance of the curve.

The adhesion of the drivers to the rails must have been in this case no less than 23¼ per cent. of the insistent weight."

The plan of putting flanges upon all the drivers, was, we understand, recommended by Mr. John Brandt, superintendent of machinery on the road, and not altogether approved of by Mr. Rogers, the builder, who apprehended difficulty on the short curves. It has been found, however, that it apparently works as easy on the road as the engines with four drivers.

There is now good reason to believe, as we are informed, that this road will be opened to Binghampton by 1st January next—in accordance with the determination of the company—and they have ordered thirty new engines to be built, to be ready for use at or about that time.

It is pleasing to those who have long advocated the construction of railroads, to connect the city of New York with the interior and with other cities, to see the *rush* with which the work is pushed upon the three lines, now in progress, terminating in the city, viz:—the Erie, the Hudson River, and the New Haven. Those having them in charge seem to realize fully that much time has been lost, and that they must now make it up by their energy and perseverance. We may therefore anticipate the earliest possible completion, and the successful operation, of these roads, which will give new life and spirit to the business of New York—and thus obliterate, in a few years, all evidences of having *hesitated* in taking the lead in railroads—or of having faltered by the way after having commenced the race.

CENTRAL RAILROAD OF THE WEST.

We find in the American Mining Journal of 2d ult., a map showing the route of what it terms "the great central railroad through the States of Ohio, Indiana and Illinois, its important points of connection, and its position in reference to other railroads, and the leading lines of eastern communication."

When we looked upon the map for the line indicated, we supposed, as a matter of course, that it referred to *our* central line to Pittsburg, and thence west through Ohio, Indiana and Illinois, to St. Louis, which is of course *the* great central line, because it cuts those three noble States nearer the centre than any other line; but we found, on refering to the description, that it meant the line from Sandusky to Bellefontain, Indianapolis, Vandalia, and thence to St. Louis—a very good line indeed, though not very *central*, as far as Ohio is concerned. It is, indeed, a good route—and has the advantage of 100 miles of the Mad River railroad, now in use—and several other sections of the line, chartered and organised under, as we are informed by the following letter, efficient boards of directors, who will go through with what they have undertaken.

We hope they will, as a line of road through that region will add largely to its wealth and improvement.

As the public mind has been directed, in former numbers, to the great central railroad of the west, running through the centre of the States of Ohio, Indiana and Illinois, I may be permitted to inform your readers, east, that the right spirit prevails upon the whole line of this great enterprise, and that there remains no reasonable doubt but that the work will be constructed in a comparatively short period of time.

In my late Nos., I stated that the first section from Sandusky to Bellefontaine, over 100 miles, was in full operation. The next section from Bellefontaine to the Indiana State line, of about 60 miles, is under the management of the Bellefontaine and Indiana company, with Patrick G. Good as president, and an active and efficient directory.

The next section of about 80 miles, from the Ohio line to Indianapolis, the seat of government of Indiana, is in charge of the Indianapolis company. This company organised on the 3d instant, by electing Jeremiah Smith, Daniel Heastin, William M. Way, and Peter S. Miller, of Randolph county, Samuel P. Anthony, Daniel Kilgour, James L. Russy, and Jas. Truitt, of Delaware county; Allen Makepeace, Robert N. Williams, William Sparks, and James Gray, of Madison county; Thomas R. Noel, of Hamilton county; Robert B. Underhill and Oliver H. Smith, of Marion county, directors. Oliver H. Smith was unanimously elected president; John H. Cook, secretary; Austin Williams, treasurer; and Thomas A. Morris, engineer.

The next section of about 75 miles, from Indianapolis to Terre Haute, is in charge of an efficient company, with Chancy Rose at its head, as president, and an active board of directors. The section from Terre Haute to St. Louis is not yet organised, but will be, I learn, the ensuing winter, as the people of the line, as well as the business community at St. Louis, are fully aroused to the great importance of the work.

There no longer remains a doubt of the construction of this great enterprise, which is evidently to be the artery of the commerce and travel of the centre of this great valley. There will, of course, be many tributaries and connecting branches upon the whole line, one among the most important of which, it seems to me, must be a line from Pittsburg to Bellefontaine—and I respectfully call the attention of the people of Philadelphia and Pittsburg to the map with reference to this connection. The object of this article is not to extend my previous ones, as to the benefits to result from this great work, but merely to give the information contained in it, and to repeat my request that you will have the map engraved and published, as that will speak in more distinct language to the public than anything I could write. S.

Indianapolis, July 8th, 1848.

WHO WAS THE ORIGINATOR OF THE GREAT TUBE?

This, like many other successful enterprises, has several claimants. The following letter from Mr. Stephenson gives one side, and we may find that the question has two, perhaps more, sides.

The Inventor of the Tubular Bridges.—We are glad to find that the views on this subject which we stated last week are entirely confirmed by the following letter, in reply to one which had appeared in the *Manchester Guardian*, from Mr. Bateman, and which we inserted in our last:

Sir,—My attention having been drawn to a letter from Mr. Bateman, in your paper of last Saturday, on the subject of the tubular bridges at Conway and the Menai Straits, of which the merit is, without scruple, arrogated to Mr. Fairbairn, I beg to annex an extract from a letter to me from the latter gentleman, dated the 28th of October, 1846:

"I am much obliged by your letter of yesterday, and especially that part of it which relates to the original idea of the bridge. I am sure it was yours in every respect; but there is nothing new, or likely to turn out valuable, but there immediately start up a hundred claimants. We are all subject to this mental encroachment; but in your case everything is now clear. At all events, you may rest assured of my best efforts in supporting the claim to which you are so justly entitled."

This extract shows sufficiently Mr. Fairbairn's feeling at the time when his letter was written, which was subsequently to the passing of the act; and I will only add to it, that I have never attempted in any way to detract from the merits of any party connected

with the work, but have always freely acknowledged the valuable assistance which has been afforded to me during its progress by Mr. Fairbairn, Mr. Hodgkinson, and Mr. Clark; but that Mr. Fairbairn devised, or had charge of the entire construction, is simply a mis-statement of facts. He, in common with the other two gentlemen named, aided me by his advice, and I acted upon it, or otherwise, as I thought proper. The company looked to me as alone responsible; and in my discretion, every other party who has been concerned in the progress of these bridges was engaged.

ROBT. STEPHENSON,
24 Great George street.
Westminster, May 21.

KIRK'S STEAM HAMMER.

We have more than once referred to this admirable machine. The following extract from the specification gives an idea of the machine.

For an Improvement in the Steam Hammer;
Lewis Kirk, Reading, Penn., April 3.

We make the following extract from the specification:—"The object of my invention is to apply the direct action of a steam piston, to operate the helve or lever of a hammer; and the nature of my invention consists in so combining a steam engine with the helve or lever of a hammer, and between the hammer and fulcrum, that when the steam is let in under the piston it shall lift up the hammer, and when the exhaust valve is opened, the piston will be at liberty to be carried down by the weight of the hammer —the steam and exhaust slide valves being operated each by a separate arm, on the shaft of the helve or lever, and the ends of these two arms being so connected with the valve rods, by slots, which permit the arms to move for some distance before they begin to act on the valves, so that the hammer shall nearly reach the end of its downward motion before the steam valve is opened, to admit steam to produce the next upward motion; and so of the exhaust valve during the upward motion of the hammer, the admission of steam to the the steam valve being governed by a slide valve, that commands a steam port in a plate immediately above the steam valve, and operated by hand, by means of which the attendant can start and stop the hammer at any time, and at any portion of its motion. And my invention also consists in combining with the hammer, thus operated, a slide plate with a port in it, under the steam valve, and a like plate under the exhaust valve; so that the attendant can, by sliding these plates, by a screw or lever, cause either the steam or exhaust valves to open or close, sooner or later, and thus regulate the length of stroke of the hammer."

Claim.—"What I claim as my invention, and desire to secure by letters patent, is the arrangement of the vertical single acting steam engine, substantially as described, when this is combined with the helve or lever of the hammer, by means of the rocker on the cross head, and the jointed links, substantially as described. I also claim the sliding plates, or regulating valves, below the steam and exhaust valves, in combination with the engine, combined with the hammer helve or lever, substantially as described, whereby the range of motion of the hammer can be increased or decreased by the attendant, at pleasure, as described."

Roebling's Patent Wire Ropes.

We find the following extract, from Mr. Roebling's specification for manufacturing *wire rope*, in the Journal of the Franklin Institute, for July. It has one peculiarity, not common to all specifications, viz:—its intelligibility; and we give it a place in the Journal as describing a process not generally understood —and of interest to many.

The patentee says: "The nature of my improvement consists, 1st, in the process of attaching to the ends of the single wires, which are drawn up for the formation of a rope or strand, equal weights, to be suspended freely over small sheaves or pulleys, for the support of which a frame is erected at the end of the rope walk. While thus all the wires are subject to a uniform tension, and can, at the same time, contract and expand with the changes of temperature, they may be twisted into a rope or strand, in the manner commonly employed in the manufacture of hemp ropes. Three or four strands thus formed may be again drawn up, tension plates attached to their ends, and the whole twisted into a thick rope. As all the wires and strands of a rope, made in this manner, will receive a uniform tension, the greatest strength will be obtained, which can be produced by the same amount of material, when united into a solid bar.

"2d. My second improvement is the method or methods I apply for preventing the twist of the fibres of the individual wires, during the process of 'laying.' This is effected by attaching to the end of each wire or strand, a piece of soft annealed wire, which, at the same time, supports the tension weight. The consequence is, that while the rope is twisted, the individual twist of the single wires will run into the annealed wires, and leave the elastic wires of the rope itself uninjured. Or, instead of using an annealed wire, I connect the end of each wire or strand, to a small swivel, which is held by a small line or rope, which passes over the pulley and supports the tension weight. The swivels, when lubricated with oil, will, by their own revolutions, allow the wires or strands to turn freely and easily.

"3d. Another part of my improvement consists in the construction of a wrapping machine, for the formation of a perfect and continuous wrapping."

Claim.—"What I claim as my original invention, and desire to secure by letters patent, is—

"1st. The process of giving to the wires and strands a uniform tension, by attaching them to equal weights, which are freely suspended over pulleys during the manufacture as above described.

"2d. The attaching of swivels, or of pieces of annealed wire, to the ends of the single wires, or to the several strands, during the manufacture of a rope, for the purpose of preventing the twist of the fibres, as above described.

"3d. The manner of constructing the wrapping machine, the head of the hall, around which the iron bar revolves by means of its collar, embracing the wire rope firmly and bearing against the wire, which is being wound upon it: said bar bearing against the face plate of the reel, for the purpose and in the manner herein shown, and the respective parts of which are combined and arranged as above described, so as to adapt it to the particular purpose of winding wire upon wire ropes."

Railroads in New Hampshire.

The good people of the Granite State are alive to the importance of railroads—and appear resolved to open several railroads from their own beautiful seaport to the interior of the State, as will be seen by the following notices from the Portsmouth Journal; and a writer in the same paper even has the boldness to talk about a communication with Montreal. We like his boldness, and hope he and others may thoroughly investigate the subject. It is a matter of great importance to Portsmouth to have an easy communication with the interior and northern part of the State—and with Montreal and the western lakes if possible. Why not Portsmouth as well as Boston and Portland? Keep it moving.

"*Portsmouth and Concord Railroad.*—Since the meeting of the stockholders in the Portsmouth and Concord railroad last week, great zeal has been manifested here to have the road opened at once to New Market, and the directors have made arrangements to commence laying the rails next week.

A large amount of assessments have been collected in this town within the week past, and the stockholders who have not yet been called upon, will add much to the same.

The road is nearly ready for the rails to be laid to Epping village, and some miles above that place are graded. A little exertion by our friends in the country will enable the directors to lay down the rail to Epping this fall. The bridges are building across the Merrimack Suncook and Soucook rivers, the grading is more than half done and rapidly progressing between Concord and Suncook village.

It is matter of great gratification that several of those who have never before paid, have now come forward and settled for their subscription."

"*Portsmouth and Dover Railroad.*—At a meeting of this corporation August 3d, inst., the committee appointed at a public meeting of the citizens of this town to procure surveys of the road, etc., were appointed managers of the corporation, and as such authorised to procure surveys and receive subscriptions for stock of the road.

The managers consist of the following gentlemen:

Edward F. Sise, John Knowlton, Albert R. Hatch, James P. Bartlett, Jno. N. Handy, Leonard Cotton, Lyman D. Spaulding, Daniel Marcy, Lory Odell Peyton R. Freeman, of Portsmouth; Simes Frink, of Greenland; James Pickering, Newington; Daniel Smith, Durham; Jeremy Perkins, Dover.

It is of the utmost importance that immediate and energetic measures should be taken to ensure the construction of this road, and ensure a junction on favorable terms with the

Cocheco railroad. The grading of that road, from Dover to Rochester is already half completed; and the space from Rochester to Farmington will be put under contract in a few days. The rails for the whole road from Dover to Farmington, a distance of 17 miles, are contracted for, and will be delivered early the next spring. Unless, by the construction of the road from Portsmouth to Dover, we open an outlet to the seaboard for the Cocheco railroad immediately, there is great danger that embarrassing engagements may be made with the roads leading to Boston, the influence of which it will cost us much trouble to overcome. A. B."

Pennsylvania Railroad and the Forwarding Merchants.

We give the following letter of the president of this company, in reply to several of the forwarding merchants of Pittsburg.

It answers the question propounded in the only way, as it appears to us, that it could be *properly* answered. That the greatest benefits may be derived, from a railroad, by all concerned, it must be under the control of those who will ensure the most efficient, uniform and economical management, which cannot be done when the road and power is owned by one party, and the cars and depots by others.

We also give it for the correct and noble views it contains, and commend it most cordially to the managers of some other public works we know of, as a model for their study.

OFFICE OF THE PENNSYLVANIA R R. Co., }
Philadelphia, August 9, 1848. }

To the Directors of the Pennsylvania Railroad Company:

The committee to whom was referred the following communication, viz:

To the President and Directors of the Pennsylvania Railroad Company:

The undersigned, transporters on the public improvements between Philadelphia and Pittsburg, having in view the commencement of preparations for pursuing their business upon the Pennsylvania railroad, have recently heard circumstances mentioned which lead them to suppose the proprietors of the road may design to engage in the business of transporting freight in cars of their own.

Impelled by the necessity of obtaining early and definite information on this point, they respectfully request to be advised of the views and intentions of the company in regard to the matter of transportation. Signed by

Lewis & Butler, Dulith, Humphreys & Co, Harris & Leech, Binghams & Dock, Wm. Bingham, Craig & Bellas, Clark & Thaw, Borbidge & Cash, James Steel & Co., P. K. Fritz, Pittsburg,

REPORT:

That a proper regard for the interest of all parties engaged in transportation, makes it just, that the policy of this company in relation thereto should be developed, and that it is due to these gentlemen and to the stockholders that the views of the directors should now be made known as a guide to the operations of the former and the expectations of the latter.

In deciding a question of so much moment o the success of the enterprise, the board hould be governed by the intentions of parties who have subscribed to the stock of the company.

The committee understand that the great and primary objects the individuals and corporations subscribing to the stock expected to realize, when they instituted the company, were to make a communication through Pennsylvania, connecting the eastern and western waters, which should at all seasons afford a conveyance, rapid and cheap, and secure uniform charges upon merchandise shipped upon it, with the intent to derive increase of business, incident to such improved means of transit.

With this view of the intentions of the stockholders, the committee are of opinion—that it is incumbent upon the board not only to construct a road permanent in its character, with gradients as low as the nature of the country and sound economy will permit, but to conduct the transportation upon it, at the lowest rates possible consistent with a fair and equitable remuneration for the capital invested, and this latter object cannot be obtained, if the profits are divided with individuals engaged in that business, because any profit gained by the individual, beyond the necessary charges on the road, must be a tax upon the trade.

Hence, upon the completion of the road, the transportation of merchandise should in the main, be conducted by the company, unless private enterprise can work at cheaper rates.

The charter provides that the road shall at all times be kept open as a public highway, at specified tolls and charges for motive power, which are far below the gross charges for transportation made by carriers on the Columbia road.

If under those rates individuals can enter into competition with the company, every facility should be afforded to them; but they must bear in mind, that prices will be regulated by the company's charges, for they cannot permit the trade through Pennsylvania to be taxed for individual profit to any greater extent than is required to give satisfactory returns to the capital invested in making the road and its appurtenances.

It must be recollected that the Pennsylvania railroad company was not instituted merely for private speculations or direct gain.

It is essentially a public work, demanding, it is true, fair equivalent for the capital invested, but having for its main object the public benefit.

It is not built by capitalists, for, with few exceptions, no retired capitalists are engaged in it. It is being built, in the main, by the corporations of the city of Philadelphia and the county of Allegheny, and consequently by the whole people of those places. The private capital engaged in it is furnished, by the active business man—the shopkeeper, the clerk, the drayman and the mechanic—and such are the parties who will furnish it, unless the retired capitalists of this city and Pittsburg shall hereafter show that they have sufficient forethought and enterprise to aid a work destined to advance their future interests.

Belonging, as it does, to the people, the benefits of the road should be spread among the people to the utmost extent—and the Pennsylvania railroad, while it returns a liberal dividend to its owners, must be made to foster trade, develope the resources of the interior, and enhance the value of real estate within the range of its influence.

This end can only be accomplished by low and uniform charges for transportation, and by devoting its undivided profits to the payment of dividends.

The attainment of uniformity in charges is not to be looked for, if the transportation is conducted by private individuals. The experience of the business community, and their knowledge of the management of public works, will satisfy them of the correctness of this assertion.

Freight between this city and Pitsburg varies with every fluctuation of trade. During the past year, the rates on goods going west changed in different periods of the year 50 and 60 per cent., and flour from Pittsburg to Philadelphia from less than a dollar to two dollars and a quarter per barrel, and vast quantities which would have waited its fair prices, the current of trade, sought other channels to market.

Under the system adopted by the State, this evil could not be avoided, for with no other motive than private emolument, it is not to be expected that individuals will pursue any other course than to make the most of their opportunities.

While the transporters are taking advantage of favoring circumstances to increase their profits, the interests of the whole trading community suffer—for not only is the profit absorbed by the freight on articles of minor value, but distant shippers are driven to other channels to the detriment of the revenues of the state works, and the legitimate business of Philadelphia and Pitsburg is transferred to other cities.

Like causes produce like effects, and if the conduct of the transportation on the railroad is left to individual enterprise, the interest of the stockholders as well as that of the business public must suffer.

The committee are of opinion that the true policy of the company will be to run its own cars at established uniform rates, and if any variation is admitted in different seasons of the year, in consequence of additional expenses incurred during the inclement months those variations should be publicly known in order to give confidence to distant freighters, and that every facility should be given to the owners of cars engaged in transporting consistent with the principles here laid down.

Thus far the committee have alluded to the policy which should govern the company after their continuous line of road is open to Pittsburg. Until that period a condition of affairs will exist requiring a modification of these views.

Freighters will undoubtedly require the goods to be receipted through in a specified time. This will involve the necessity of through lines, and the company will be obliged either to hire boats at their temporary

terminus, or to carry goods to that terminus for transporters already engaged in the business.

The former course would involve the company in risks of doubtful propriety, and might conflict with their chartered privileges; the latter course would be preferable in many points of view, and should be adopted if satisfactory arrangements can be made with these gentlemen. The company would in this case avoid the expense of depots and agencies, and deliver their goods at the temporary terminus at specified rates to the transporter from their warehouses in Philadelphia, and receive those coming from the west at the same point, deliverable at the transporter's depots in Philadelphia.

If the cars owned by the transporters, are used for this service, a suitable remuneration for the use of such cars will for a deduction from the charge of transportation.

All of which is respectfully submitted.

S. V. MERRICK, Chairman.

At a meeting of the board of directors, held August 9th, 1848, it was unanimously

Resolved, That the report of the committee on road be adopted, and a copy transmitted to Messrs. Lewis & Butler.

Resistance of Railway Trains,

Or Experiments by Gravity on Planes.

The London Morning Herald gives a report of a series of experiments made on the Wotton Basset inclined plane, which we take from the Railway Chronicle of June 17th, with the editor's remarks.

The *Morning Herald* continues to publish the experiments produced at the discussion in the Institution of Civil Engineers, along with its own comments and application of the same. We give them below, but with our decided dissent from the conclusions drawn, and our protest against experiments made on so short a space, and in so rough a manner, being used as the basis from which to draw with safety any conclusions of a general kind. We are glad to hear that there is every likelihood of experiments on a large scale, and of an indisputable character being made on the subject of the resistance of railway trains, which may settle all these questions in a manner worthy of the profession and of the great interests placed in their hands.

Experiments down Inclined Planes by Gravity—"We return to the consideration of this interesting and important practical railway investigation. As we have previously stated, the question of the "resistance to railway trains at certain velocities," is not a mere scientific question, but one in which the convenience and accommodation of the public are very materially involved. The establishment of the truth of the formula, which makes the resistance at 60 miles per hour, some 40 pounds per ton, or 50 per cent. higher than we shall presently show it to be, would present a strong economical argument either against express travelling, or for the restriction of the accommodation of quick transit to first class passengers at high fares.

In the observations made by us a few days since, in reference to the extraordinary differences of opinion existing on the subject between practical engineers, we noticed the singular fact that while a uniform velocity of not more than 36 miles per hour has ever been maintained with narrow gauge trains, by the force of gravity, down an incline of 1 in 100, a uniform velocity of upwards of 53 miles per hour had been maintained with broad gauge trains by gravity down an equal incline. We then stated that we had ourselves gone down the Box tunnel incline (1 in 100,) at a greater uniform velocity than 53 miles per hour. We have since made a series of experiments down the Wootton Bassett incline, stated to be 1 in 100, but some portion of which is 1 in 110 only; and down other inclines on the Bristol and Exeter railway; and from the details given below, it will be seen that a much greater uniform velocity than 53 miles per hour, even under very unfavorable circumstances, can be obtained down 1 in 100, by gravity, and that consequently the foundation on which many railway engineers have rested the very pillar of their theory of high rates of resistance at high velocities, is utterly without substantiality—that, indeed, it is a mere fallacy, which will hereafter be numbered among the delusions and visions of practical men.

The whole of the following experiments were made with ordinary working trains, and the object was not to collect minute data from which any scientific results might be deduced, but simply to prove, exclusive of the results of experiments made by either broad or narrow gauge engineers, that what has long been considered an established fact in reference to the resistance of railway trains descending inclined planes by force of gravity, is a mere circumstance which, although applicable to narrow gauge trains, is utterly inapplicable to broad gauge trains. The diversities in the rates of speed shown in the workings given below arose, no doubt, from a great variety of causes. Nearly the whole of the portions of the line over which the experiments were made, consisted of a series of curves, and of cuttings and embankments. The carriages were of different weights, and may occasionally have been well or badly coupled. One day the weather was calm, the next it was unsettled; in some of the experiments there was a slight head wind, in others a moderate side wind from the right, or a moderate side wind from the left prevailed, and during three of the experiments there was a brisk side wind. The speed, too, at which the trains were running when the steam was shut off would, in relation to the weights of the carriages, as well as to the direction of the wind, enter into the causes of these diversities of speed. We shall, however, not hazard a single opinion on these matters, but confine ourselves to demonstrations that the formula of high resistances at high velocities is worthless in respect of the resistances due to broad gauge trains descending inclined planes by their own gravity.

In the experiments made down the Wootton Bassett incline with the dynanometer carriage, constructed under the directions of Mr. Brunel, the carriages were weighted to 10 tons each. In no one of the experiments given below, which were made with the ordinary passenger trains, did any of the carriages amount to this weight, that is, they were not full of passengers. The engines employed belong to an old class, and weigh, road-worthy, about 23 or 24 tons.

It has been objected against the experiments made down the Wootton Bassett incline with the dynanometer carriage, that the distance over which a uniform or increasing velocity was attained, viz: 10 or 11-16ths of a mile, is too short to produce a useful practical result. To meet this objection, we took the rates of speed not only down the mile and one-eighth of the fall of 1 in 100, but down the next seven-eighths of a mile, which are on a fall of 1 in 660 only. The fall of 1 in 100 commences a few chains beyond the 85th mile post, and terminates a few furlongs beyond the 86¼ mile post. Thence to the 86¾ mile-post the fall is 1 in 666.

The first experiment was made with a train consisting of four passenger carriages, three horse boxes, and one luggage van, weighing about 60 tons. The engine was the "Orion." The following is the working for the quarter mile immmediately preceding the 85th mile post, as well as from the 85th to the 86¼ mile-post. The rails were dry, and very little wind was stirring.

Mile-posts.	Time per quarter mile in seconds.	Miles per hour.
84¼	15½	58·1
85	15	60
85¼	15½	58·1
85½	15½	59
85¾	16½	54·5
86	16½	54·5
86¼	16½	54·5
86½	16½	53·7
86¾	17	52·9

It is here seen that the speed for upwards of half a mile down 1 in 660 is very little below the uniform velocity down nearly three-quarters of a mile of 1 in 100. We merely record the fact, leaving those who have more time at their command than we have ourselves, to explain or suggest the causes."

This first experiment proves precisely *the reverse* of the theory of the writer, in so far as it proves anything. At 85, near the commencement of the incline, a quarter of a mile is done in 15 seconds; at 86¼, near the foot of the incline, it takes 16½ seconds, being a velocity rapidly *retarded*, instead of uniform, which is precisely as might have been expected. The next experiment is so badly observed that nothing at all can be deduced from it.

"The next trip was with a train of four passenger carriages and a horse box, weighing about 41 or 42 tons, and was attached to the "Mars" engine. The following is the working—rails dry, and weather calm:—

Mile-posts.	Time per quarter mile in seconds.	Miles per hour.
84¼	18	50
85	18	50
85¼	18	50
85½	17½	52·2
85¾	17½	50·7
86	17½	50·7
86¼	17½	50·7
86½	17½	50·7
86¾	18	50

The third trip was with the same engine,

with three passenger carriages, one luggage van, and two horse boxes, weighing about 45 or 46 tons. The rates of speed were as follows:—

Mile-posts.	Time per quarter mile in seconds.	Miles per hour.
84¼	17½	52·2
85	16½	53·7
85¼	17½	60·7
85½	16½	54·5
85¾	17½	52·2
86	17½	52·2
86¼	17½	52·2
86½	17½	51·4
86¾	18	50"

This third experiment has at 85 a quarter of a mile done in 16½ seconds; and at 86¼, the foot of the incline, it takes 17½, being again a clear case of *retardation* instead of acceleration, or at least uniformity, as the writer would have it. In the fourth experiment we have again at 85, one quarter of a mile in 16½ seconds, and at the foot, at 86¼, one quarter of a mile in 17½ seconds—exactly proving the reverse of the writer's theory. The fifth is irregular, and shows nothing at all.

"The fourth experiment was made with the "Firebrand" engine. The train consisted of three passenger carriages and a luggage van, weighing about 36 tons. The carriages were well filled with passengers. Below is the working:—

Mile-posts.	Time per quarter mile in seconds.	Miles per hour.
84¼	16½	54·5
85	16½	24·5
85¼	17½	51·4
85½	17	52·9
85¾	17½	51·4
86	17½	51·4
86¼	17½	51·4
86½	17½	51·4
86¾	17½	51·4

The fifth experiment was with the "Orion," with four passenger carriages, three horse boxes, and a luggage van, weighing about 59 or 60 tons. The following are the results, premising that the steam was not shut off in this case until the engine was within a few chains of the 85¼ mile-post:—

Mile-posts.	Time per quarter mile in seconds.	Miles per hour.
84¼	17½	51·4
85	17½	51·4
85¼	17	52·9
85½	17½	52·2
85¾	16½	53·7
86	17	52·9
86¼	17	52·9
86½	17½	52·2
86¾	17½	52·2

The sixth experiment was with the "Load Star." The train consisted of four passenger carriages and a luggage van, weighing about 41 or 42 tons. A brisk side wind was blowing. It will be observed that the rates of speed alternate over the whole extent of the 2¼ miles:—

Mile-posts.	Time per quarter mile in seconds.	Miles per hour.
84¼	16	56·3
85	15½	58·1
85¼	15½	57·1
85½	16	56·3
85¾	17	52·9
86	16½	53·7
86¼	17	52·9
86½	16½	54·5
86¾	17	52·9"

The sixth experiment belongs again to the retarded series, and disproves the writer's theory; the speed at starting is 57, and at ending 54 miles an hour! The same may be said of the seventh, eighth, and ninth. The rest are on the inclination of 1 in 120.

"The seventh trip was with the "Arab," with a train consisting of three passenger carriages and a luggage van, weight about 38 or 40 tons—carriages well filled. In this trip we obtained the greatest uniform velocity—rails dry; weather calm:—

Mile-posts.	Time per quarter mile in seconds.	Miles per hour.
84¼	15½	58·1
85	15½	58·1
85¼	15½	57·1
85½	15½	59
85¾	15½	57·1
86	15½	57·1
86¼	15½	57·1
86½	16	56·3
86¾	16	56·3

The eighth experiment was with the "Bellona," with four passenger carriages and a luggage van, weighing about 41 or 42 tons. The working was as follows:—

Mile-posts.	Time per quarter mile in seconds.	Miles per hour.
84¼	16	56·3
85	16	56·3
85¼	16½	53·7
85½	16½	55·4
85¾	17	52·9
86	16½	53·7
86¼	17	52·9
86½	16½	53·7
86¾	16½	53·7

A brisk side wind prevailed on the occasion, and the same result was produced as in the previous experiment, where a side wind affected the train, viz: alternating rates of speed.

The ninth experiment was with the "Firebrand," with a train of four carriages and a luggage van, weighing about 55 or 56 tons—rails dry; slight side wind:—

Mile-posts.	Time per quarter mile in seconds.	Miles per hour.
84¼	16	26·3
85	16½	54·5
85¼	16½	54·5
85½	17	52·9
85¾	17½	50·7
86	17½	50·7
86¼	17½	59·7
86½	17½	50·7
86¾	18	50

The tenth experiment was upon the Bristol and Exeter line, from the 174th to the 176¼ mile-post. This portion of the line is on a fall of 45·75 feet per mile, or about 1 in 120. The engine employed was the "Load Star," and the train consisted of four passenger carriages and a luggage van, weight about 41 or 42 tons. The descent was commenced at a speed of about 36 miles per hour, and the following are the workings—rails dry, and slight head wind:—

Mile-posts.	Time per quarter mile in seconds.	Miles per hour.
174¼	24½	36·3
174½	23½	38·3
174¾	23½	38·3
175	22½	39·6
175¼	22½	40
175½	22	40·9
175¾	21½	41·4
176	21½	41·9
176¼	21½	42·4

In this experiment, the velocity down an incline less by 20 feet per mile than that down which the narrow gauge trains have never yet maintained a uniform velocity of more than 36 miles per hour, increased from 36·3 to 42·4 or 6·1 miles per hour. And yet we have little doubt we shall still find practical men contending for the high rates of resistances which some of the narrow gauge party pertinaciously assume to be due to all railway trains travelling at high velocities.

The eleventh experiment was from the 172½ to the 170¼, viz: 2 miles. The engine employed was the "Saturn," and the train consisted of five passenger carriages and a luggage van, weighing about 56 or 57 tons. For about two-thirds of a mile the fall is 1 in 82; this is followed by a fall of about 6 chains of 1 in 90, and another fall of about 7 or 8 chains of 1 in 82. The rest of the distance is on a fall of 1 in 90. The average velocity of the train through the White Ball Tunnel, 49 chains in length, and which immediately precedes the incline over which we took the working of the train, was 42·5 miles per hour. It will be seen that this speed was increased to 50 miles an hour at the 170¼ mile-post. The following are the workings of this trip:—

Mile-posts.	Time per quarter mile in seconds.	Miles per hour.
172¼	20½	43·9
172½	20½	44·5
172	20	45
171¾	19½	46·2
171½	19	47·4
171¼	18½	48·6
171	18½	49·3
170¾	18	50

The twelfth experiment was a second run down the 1 in 120, between the 174th to the 176¼ mile-post. The engine employed was the "Firebrand," and the train consisted of four carriages and a luggage van, weighing about 44 or 45 tons. The working follows—rails dry, and moderate side wind:—

Mile-posts.	Time per quarter mile in seconds.	Miles per hour.
174¼	24	37·5
174½	23½	37·9
174¾	23½	37·9
175	23½	38·3
175¼	23½	38·3
175½	23	39·1
175¾	23½	38·7
176	23	39·1
176¼	22½	40

The thirteenth and last experiment was with the "Milo," and a train of three passenger carriages and a luggage van. Weight about 34 or 35 tons. A brisk side wind prevailed.

Mile-posts.	Time per quarter mile in seconds.	Miles per hour.
172¼	16½	55·4
172½	16½	55·4
172	16	56·3
171¾	16½	55·4
171½	16½	54·5
171¼	16	56·3
171	16	56·3
170¾	16	56·3

In this experiment the steam was shut off at the 172½ mile-post, which is in the White Ball Tunnel."

The reader who has read our comments, in which we show that the experiments exceeding 50 miles an hour all show rapid retardation, will be surprised at the following conclusion—that an uniform velocity of 60 miles an hour is maintained by broad gauge

carriages down 1 in 100—a conclusion directly in the face of the facts adduced.

"The results of these experiments satisfy us that, with broad gauge passenger carriages, weighted to ten tons each, a uniform velocity of at least 60 miles per hour can be obtained by gravity down a straight incline of 1 in 100, in calm weather; that is, 24 miles per hour faster than the velocity laid down in the formula.

We perfectly well recollect that Mr. Brunel was laughed at when he stated, some years ago, that he could get 60 miles per hour out of a locomotive. We now get 75 miles per hour with heavy trains. His opinion that he could obtain a uniform velocity of from 50 to 55 miles per hour by gravity down 1 in 100, was treated with scarcely less courtesy. These practically demonstrated and demonstrative affirmatives of things declared to be "impossible," should teach some of our extremely clever paper calculators and ingenious theorizers the insecurity—for their own fame—of laying down "general" rules upon incomplete or one-sided data. They are too positive and too clever—genius is modest, and usually doubts in these matters.

The experiments were taken with one of Charles Frodsham's beautifully accurate split seconds hand watches, the construction o which we explained in a previous article."

Mad River Railroad Report.

We find in the Sandusky Clarion, of 21st August, the following synopsis of a report of this company, for 8½ months—from which we learn that the road is very nearly completed to Springfield, by which the communication from the lake to Cincinnati will be opened; and we also learn that its business has increased regularly, and the income steadily exceeded expectation, from the day the first engine ran upon the road. This is gratifying—but the increase of the past will be greatly exceeded by that of the *future*, we feel quite willing to guarantee—at a small commission.

The editor says the "Hon. E. Lane, president of this company, has laid before us the annual report of the president and directors of the affairs of the road, for the eight and a half months preceding the 3d of July.

"At the last annual meeting in October, the road was in use from Sandusky to Bellefontaine, 102 miles. November 17th, the cars ran to West Liberty; and on the 30th of March last, the communication extended to Urbana, making 120 miles, which left only 14 miles to be completed between Urbana and Springfield, to render the connection with the Little Miami railroad and the communication between Sandusky city and Cincinnati entire and complete. The completion of this 14 miles has been retarded by the late wet weather, but we are expecting *every day* to hear that it is finished. A branch to Findlay—the country seat of Hancock county—is progressing viorously; the grade is nearly finished, and timber for superstructure mostly upon the ground. It is hoped it may be completed in season to bring to market the crops of the present year.

"Surveys and estimates for a continuation of the main line to Dayton, are far advanced, and contracts for construction may be let immediately. The character and amount of subscriptions applicable to the work, afford the strongest expectations that it will be speedily completed.

"The legislature, at its last session, gave power to the company to increase its capital stock to $4,000,000—a provision deemed sufficiently large for all future wants.

"The resources of the company have hitherto been appropriated to construction, and the revenue of 1848 is believed to be sufficient to establish the connection with the Little Miami road at Springfield, and leave no debts except those secured by the mortgages.

"The directors believe that dividends of profits should be made among stockholders as early as possible; and announce their belief that the earnings of the road, after paying current expenses and interest of loans, will be applicable to this purpose after the close of the present year.

"They also announce the gratifying fact, that from the day the first engine ran on the road, the income has steadily exceeded expectation; that it has never been more satisfactory than during the period covered by their present report; and that it justifies the confident expectation that the stock of the company, as soon as the road is finished, will become a sound, steadily productive, and permanently valuable investment for its owners.

"The road equipments of the company consist, at the date of this report, of 142 covered freight cars; 63 open freight cars; 2 covered 8-wheel freight cars; 25 hand cars; 6 passenger cars; 4 8-wheel baggage cars, and 13 locomotive engines—the whole valued at $176,950. In addition to the above, 2 locomotive engines have since been received from Patterson, N. J., and 2 more are contracted for in Cincinnati, one delivered in July and the other to be delivered in September—11 covers to engines; 2 frames and 2 tender frames, and materials for 20 eight-wheel freight cars.

"The amount received for travel and transportation from the middle of October, 1847, to the end of June, 1848, is $106,375 51.

"The amount of disbursements for construction, which includes the completion of southern division No. 2, from Bellefontaine to Urbana, southern division No. 3 from Urbana to Springfield, and side tracks at Belle Centre and Tiffin, is $86,173 89½.

"The amount expended for repairs, including new track between Sandusky city and Bellevue, is $51,463 31½.

"The expenses of shops, locomotives, cars, materials and wages of men employed in Sandusky city, $80,179 09.

"The expenses of transportation, including wages of men, oil, etc., exclusive of wood, are $23,144 56

"For wood, including 4000 cords on hand, $12,615 57.

"Expenses, engineering, salaries and wages of officers, $15,282 71.

"Iron and spikes, $66,719 06.

"The following are the names of the officers for the enguing year:

"*President*, Ebenezer Lane; *Treasurer and secretary*, R. Patterson; *Superintendent*, E. F. Osborn; *Directors*, Ebenezer Lane, E. F. Osborn, F. M. Follett, Samuel Henshaw, Mathias P. Sawyer, Henry Timmins, David A. Neal, Samuel Keener, Wm. Hunt, Peter Odlin, Samuel Mason, Eleutheros Cook, Daniel Beckel."

TO CONTRACTORS.

SEALED proposals will be received at the office of the Lafayette and Indianapolis Railroad Co. in Lafayette, until the 11th day of October next, for the Grading, Masonry and Bridging of that part of said road lying between the summit south of Durkee's Run, near Lafayette, and Lebanon, in Boone county, about 34 miles. Also, for the wooden superstructure for the same, in a distinct bid.

Plans and specifications will be exhibited by the engineer. By order of the Board.

ALBERT S. WHITE, Pres't.

Lafayette, Aug. 17, 1848. 6t35

TO MACHINISTS & MANUFACTURERS. The Subscribers have taken the READING CAR AXLE MANUFACTORY—and are prepared to execute orders for *Axles of every description*, and Wrought Iron Shafts for Steamboats, Mills, etc., made from superior material, at short notice. Address *Reading, Pa.*

ANDREW TAYLOR & CO.

August 5, 1848—3m*

RAILROAD SCALES.—THE ATTENTION of Railroad Companies is particularly requested to Ellicotts' Scales, made for weighing loaded cars in trains, or singly, they have been the inventors, and the first to make platform scales in the United States; supposing that an experience of 20 years has given a knowledge and superior advantage in the business.

The levers of our scales are made of wrought iron, all the bearers and fulcrums are made of the best cast steel, laid on blocks of granite, extending across the pit, the upper part of the scale only being made of wood. E. Ellicott has made the largest Railroad Scale in the world, its extreme length was one hundred and twenty feet, capable of weighing ten loaded cars at a single draft. It was put on the Mine Hill and Schuylkill Haven Railroad.

We are prepared to make scales of any size to weigh from five pounds to two hundred tons.

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Office, No. 3 North 5th street,

1y25 Philadelphia, Pa.

TO RAILROAD COMPANIES AND MANufacturers of railroad Machinery. The subscribers have for sale Am. and English bar iron, of al. sizes; English blister, cast, shear and spring steel; Juniata rods; car axles, made of double refined iron; sheet and boiler iron; cut to pattern; tiers for locomotive engines, and other railroad carriage wheels, made from common and double refined B. O. iron; the latter a very superior article. The tires are made by Messrs. Baldwin & Whitney, locomotive engine manufacturers of this city. Orders addressed to them, or to us, will be promptly executed.

When the exact diameter of the wheel is stated in the order, a fit to those wheels is guaranteed, saving to the purchaser the expense of turning them out inside.

THOMAS & EDMUND GEORGE,

a45 N. E. cor. 12th and Market sts., Philad., Pa.

THE NEWCASTLE MANUFACTURING Company continue to furnish at the Works, situated in the town of Newcastle, Del., Locomotive and other steam engines, Jack screws, Wrought iron work and Brass and Iron castings, of all kinds connected with Steamboats, Railroads, etc.; Mill Gearing of every description; Cast wheels (chilled) of any pattern and size, with Axles fitted, also with wrought tires, Springs, Boxes and bolts for Cars; Driving and other wheels for Locomotives.

The works being on an extensive scale, all orders will be executed with promptness and despatch. Communications addressed to Mr. William H. Dobbs, Superintendent, will meet with immediate attention.

ANDREW C. GRAY,

a15 President of the Newcastle Manuf. Co.

DIRECT ACTION ENGINES FOR STEAMBOATS.

THE PATENT DOUBLE CYLINDERS,

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THE ANNULAR RING PISTON ENGINES, of Messrs. Mauldslay, Sons & Field, of London, may be built in the United States, under license, which can be obtained of their agent,

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May 6, 1848.

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The subscribers have on hand, and are constantly receiving, from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—Square, flat & octagon.
Best warranted Cast Steel—Square, flat & octagon.
Best Double and Single Shear Steel—Warranted.
Machinery Steel—Round.
Best and 2d qy. Sheet Steel—for Saws and other purposes.
German Steel—flat and sqr., "W. I. & S." "Eagle" and "Goat" Stamps.
Genuine "Sykes," L Blister Steel.
Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms, by WM. JESSOP & SONS,
91 John Street, New York.

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Curtis & Hand, 47 Commerce St., Philadelphia.
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May 6, 1848.

NEW PATENT CAR WHEELS.

THE SUBSCRIBERS ARE NOW MANUfacturing Metallic Plate Wheels of their invention, which are pronounced by those that have used them, a superior article, and the demand for them has met the most sanguine expectations of the inventors. Being made of a superior quality of Charcoal Iron, they are warranted equal to any manufacture.

We would refer Railroad Companies and others to the following roads that have them in use. Hartford and New Haven, Connecticut River Railroad, Housatonic, Harlem, Farmington, and Stonington.

SIZER & CO.

January 29, 1848. tf. Springfield, Mass.

INDIA RUBBER RAILROAD SPRINGS.

These springs are now generally acknowledged to be far superior to steel. They are very much lighter—their power is more easily regulated—they are more elastic, and yet possess great strength, and they always retain their elasticity, and are not affected by extremes of cold or heat. The very easy motion which a Car possesses when fitted with these springs is at once perceptable. They are equally applicable to Engines and Tenders.

Railroad and other companies are requested to notice that the Patent for these springs was granted to *W. C. Fuller* by the United States Government, and that any parties vending or using such springs, without his license, infringe upon his Patent, and will be proceeded against for so doing.

G. M. KNEVITT, Agent for the Patentee,
78 Broad St., New York.

July 15, 1848.

TO RAILROAD CONTRACTORS. NASHville and Chattanooga Railroad. On the 1st of August next Proposals will be received at the Railroad Office in Nashville, for the Graduation and Masonry of Forty Miles of the Nashville and Chattanooga Railroad, comprising a large am't of rock excavation, and *One Tunnel of Seven Hundred Yards in Length.*

CHARLES F. M. GARNETT,
5t27 Chief Engineer.

RAILROAD IRON AND LOCOMOTIVE Tyres imported to order and constantly on hand by A. & G. RALSTON
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THE MATTEWAN COMPANY HAVE added to their Machine Works, an extensive LOCOMOTIVE ENGINE department, and are prepared to execute orders for *Locomotive Engines* of every size and pattern—also, *Tenders, Wheels, Axles,* and other Railroad Machinery, to which they ask the attention of those who wish such articles, before they purchase elsewhere.

STATIONARY ENGINES, BOILERS, ETC., Of any required size or pattern, arranged for driving *Cotton, Woollen,* or *other* Mills, can be had on favorable terms, and at short notice.

COTTON AND WOOLLEN MACHINERY, Of every description, embodying all the modern improvements, second in quality to none in this or any other country, made to order.

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Of every description, may be had at short notice, as this company has probably the most extensive assortment of patterns in this line, in any section of the country, and are constantly adding to them.

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Turning Lathes, Slabbing, Planing, Cutting, and *Drilling* Machines, of the most approved patterns, together with all other tools required in machine shops, may be had at the Mattewan Company's Shops, Fishkill Landing, or at

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WM. B. LEONARD, *Agent.*

FAIRBANKS' RAILROAD SCALES.

THE Subscribers are prepared to construct at short notice, *Railroad* and *Depot Scales,* of any desired length and capacity. Their long experience as manufacturers—their improvements in the construction of the various modifications, having reference to strength, durability, retention of adjustment, accuracy of weight and despatch in weighing—and the long and severe tests to which their scales have been subjected—combine to ensure for these scales the universal confidence of the public.

No other scales are so extensively used upon Railroads, either in the United States or Great Britain; and the manufacturers refer with confidence to the following in the United States.

Eastern Railroad,	Boston and Maine R. R.,
Providence Railroad,	Providence & Wor. R.R.,
Western Railroad,	Concord R. R.,
Old Colony Railroad,	Fitchburg R. R.,
Schenectady Railroad,	Syracuse and Utica R. R.,
Baltimore & Ohio Road,	Baltimore & Susq. R. R.,
Phila. & Reading Road.	Schuylkill Valley R. R.,
Central (Ga.) Railroad.	Macon and Western R.R.,

New York and Erie Railroad;
and other principal Railroads in the Western, Middle and Southern States.

E. & F. FAIRBANKS & CO.
St. Johnsbury, Vt.

Agents { FAIRBANKS & Co., 81 Water st. N. York. / A. B. NORRIS, 196 Market st., Philad.

April 22, 1848. 1y*17

PATENT HAMMERED RAILROAD, SHIP and Boat Spikes. The Albany Iron and Nail Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes, from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscriber at the works, will be promptly executed. JOHN F. WINSLOW, *Agent,*
Albany Iron and Nail Works, Troy, N. Y.

The above spikes may be had at factory prices, of Erastus Corning & Co., Albany; Hart & Merritt, New York; J. H. Whitney, do.; E. J. Ewing, Philadelphia; Wm. E. Coffin & Co., Boston. ja45

THE SUBSCRIBERS ARE PREPARED TO execute orders at their Phœnix Works for Railroad Iron of any required pattern, equal in quality and finish to the best imported.

REEVES, BUCK & CO.,
Philadelphia.
ROBERT NICHOLS, Agent,
26tf No. 79 Water St., New York.

CHILLED RAILROAD WHEELS.—THE undersigned are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of Spokes or Disks, by a new process which prevents all strain on the metal, such as is is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St. below 13th,
Nov. 10, 1847. [tf.] Philadelphia, Penna.

THE SUBSCRIber has on hand a good assortment of his best Leveling and Surveying Instruments, among them his improved Compass for taking angles without the needle—also Bells, suitable for Churches, Railroad Depots, etc. ANDREW MENEELY,
West Troy, May 12, 1847. 1y*21

PATENT RAILROAD, SHIP AND BOAT Spikes. The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years' successful operation, and now almost universal use in the United States (as well as England, where the subscriber obtained a patent) are found superior to any ever offered in market.

Railroad companies may be supplied with Spikes having countersink heads suitable to holes in iron rails, to any amount and on short notice. Almost all the railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

All orders directed to the Agent, Troy, N. York will be punctually attended to.

HENRY BURDEN, *Agent.*

Spikes are kept for sale, at Factory Prices, by & J. Townsend, Albany, and the principal Iron merchants in Albany and Troy; J. I. Brower, 222 Water St., New York; A. M. Jones, Philadelphia; T. Jarviers, Baltimore; Degrand & Smith, Boston.

*** Railroad Companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand.

ja45

TWO LOCOMOTIVE AND MARINE ENgine Boiler Builders. Pascal Iron Works, Philadelphia. Welded Wrought Iron Flues, suitable for Locomotives, Marine and other Steam Engine Boilers, from 2 to 5 inches in diameter. Also, Pipes for Gas, Steam and other purposes; extra strong Tube for Hydraulic Presses; Hollow Pistons for Pumps of Steam Engines, etc. Manufactured and for sale by

MORRIS TASKER & MORRIS,
Warehouse S. E. corner 3d and Walnut Sts., Philadelphia. 1tf

CHILLED RAILROAD WHEELS.—THE undersigned, the *Original Inventor* of the *Plate Wheel* with solid hub, is prepared to execute all orders for the same, promptly and faithfully, and solicits a share of the patronage for those kind of wheels which are now so much preferred, and which he originally produced after a large expenditure of time and money.

A. TIERS.
Point Pleasant Foundry,

He also offers to furnish Rolling Mill Castings, and other Mill Gearing, with promptness, having, he believes, the largest stock of such patterns to be found in the country. A. T.

Kensington, Philadelphia Co.,
March 12, 1848. 1tf

NORWICH CAR FACTORY,
NORWICH, CONNECTICUT.

AT the head of navigation on the River *Thames*, and on the line of the *Norwich and Worcester Railroad*, established for the manufactory of

RAILROAD CARS,
OF EVERY DESCRIPTION, VIZ:
PASSENGER, FREIGHT AND HAND CARS,
ALSO, VARIOUS KINDS OF
ENGINE TENDERS AND SNOW PLOUGHS.
TRUCKS, WHEELS & AXLES

Furnished and fitted at short notice.

Orders executed with promptness and despatch.

☞ Any communication addressed to
JAMES D. MOWRY,
General Agent,
Norwich, Conn.,
Will meet with immediate attention. 1y8

MANUFACTURE OF PATENT WIRE

Rope and Cables for Inclined Planes, Standing Ship Rigging, Mines, Cranes, Tillers etc., by JOHN A. ROEBLING, *Civil Engineer*,
Pittsburgh, Pa.

These Ropes are in successful operation on the planes of the Portage Railroad in Pennsylvania, on the Public Ships, on Ferries and in Mines. The first rope put upon Plane No. 3, Portage Railrord, has now run 4 seasons, and is still in good condition. 92v1 1y

NICOLL'S PATENT SAFETY SWITCH

for Railroad Turnouts. This invention, for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design.

It acts independently of the main track rails, being laid down, or removed, without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two Castings and two Rails; the latter, even if much worn or used, not objectionable.

Working Models of the Safety Switch may be seen at Messrs. Davenport and Bridges, Cambridgeport, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained on application to the Subscriber, Inventor, and Patentee.
G. A. NICOLLS,
ja45 *Reading, Pa.*

TO RAILROAD COMPANIES AND BUILDERS OF MARINE AND LOCOMOTIVE ENGINES AND BOILERS.

PASCAL IRON WORKS.

WELDED WROUGHT IRON TUBES

From 4 inches to ⅛ in calibre and 2 to 12 feet long, capable of sustaining pressure from 400 to 2500 lbs. per square inch, with Stop Cocks, T's, L's, and other fixtures to suit, fitting together, with screw joints, suitable for STEAM, WATER, GAS, and for LOCOMOTIVE and other STEAM BOILER FLUES.

Manufactured and for sale by
MORRIS, TASKER & MORRIS.
Warehouse S. E. Corner of Third & Walnut Streets,
PHILADELPHIA.

LAWRENCE'S ROSENDALE HYDRAulic Cement. This cement is warranted equal to any manufactured in this country, and has been pronounced superior to Francis' "Roman." Its value for Aqueducts, Locks, Bridges, Flooms and all Masonry exposed to dampness, is well known, as it sets immediately under water, and increases in solidity for years.

For sale in lots to suit purchasers, in tight paper-ed barrels, by JOHN W. LAWRENCE,
142 Front street, New York.

☞ Orders for the above will be received and promptly attended to at this office. 32 1y

DAVENPORT & BRIDGES'
CAR WORKS, CAMBRIDGEPORT, MASS.

Manufacture to Order, Passenger and Freight Cars of every description, and of the most improved pattern; also furnish Snow Ploughs and Chilled Wheels of any pattern and size. Forged Axles, Springs, Boxes and Bolts for Cars at the lowest prices.

All orders punctually executed and forwarded to any part of the country.

Our Works are within fifteen minutes ride from State street, Boston—Omnibuses pass every fifteen minutes. 10tf

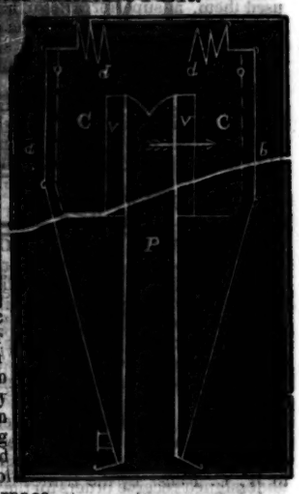
THE SUBSCRIBER IS PREPARED TO execute at the Trenton Iron Works, orders for Railroad Iron of any required pattern, and warranted equal in every respect in point of quality to the best American or imported Rails. Also on hand and made to order, Bar Iron, Braziers' and Wire Rods, etc., etc.
PETER COOPER,
1y10 17 Burling Slip, New York.

RAILROAD IRON, PIG IRON, ETC.

600 Tons of T Rail 60 lbs. per yard.
25 Tons of 2½ by ½ Flat Bars.
25 Tons of 2½ by 9-16 Flat Bars.
100 Tons No. 1 Gartshorie.
100 Tons Welsh Forge Pigs.
For Sale by A. & G. RALSTON & CO.
No. 4 So. Front St., *Philadelphia*

FRENCH AND BAIRD'S PATENT SPARK ARRESTER.

TO THOSE INTERESTED IN Railroads, Railroad Directors and Managers are respectfully invited to examine an improved Spark Arrester recently patented by the undersigned.



Our improved Spark Arresters have been extensively used during the last year, on both passenger & freight engines, and have been brought to such a state of perfection that no annoyance from sparks or dust from the chimney of engines on which they are used is experienced.

These Arresters are constructed on an entirely different principle from any heretofore offered to the public. The form is such that a rotary motion is imparted to the heated air smoke and sparks passing through the chimney, and by the centrifugal force thus acquired by the sparks and dust they are separated from the smoke and steam, and thrown into an outer chamber of the chimney through openings near its top, from whence they fall by their own gravity to the bottom of this chamber; the smoke and steam passing off at the top of the chimney, through a capacious and unobstructed passage, thus arresting the sparks without impairing the power of the engine by diminishing the draught or activity of the fire in the furnace.

These chimneys and arresters are simple, durable and neat in appearance. They are now in use on the following roads, to the managers and other officers of which we are at liberty to refer those who may desire to purchase or obtain further information in regard to their merits.

R. L. Stevens, President Camden and Amboy Railroad Company; Richard Peters, Superintendant Georgia Railroad, Augusta, Ga.; G. A. Nicolls, Superintendant Philadelphia, Reading and Pottsville Railroad, Reading, Pa.; W. E. Morris, President Philadelphia, Germantown and Norristown Railroad Company, Philadelphia; E. B. Dudley, President W. and R. Railroad Company, Wilmington, N. C.; Col. James Gadsden, President S. C. and C. Railroad Company, Charleston, S. C.; W. C. Walker, Agent Vicksburgh and Jackson Railroad, Vicksburgh, Miss.; R. S. Van Rensselaer, Engineer and Sup't Hartford and New Haven Railroad; W. R. M'Kee, Sup't Lexington and Ohio Railroad, Lexington, Ky.; T. L. Smith, Sup't New Jersey Railroad Trans. Co.; J. Elliott, Sup't Motive Power Philadelphia and Wilmington Railroad, Wilmington, Del.; J. O. Sterns, Sup't Elizabethtown and Somerville Railroad; R. R. Cuyler, President Central Railroad Company, Savannah, Ga.; J. D. Gray, Sup't Macon Railroad, Macon, Ga.; J. H. Cleveland, Sup't Southern Railroad, Monroe, Mich.; M. F. Chittenden, Sup't M. P. Central Railroad, Detroit, Mich.; G. B. Fisk, President Long Island Railroad, Brooklyn.

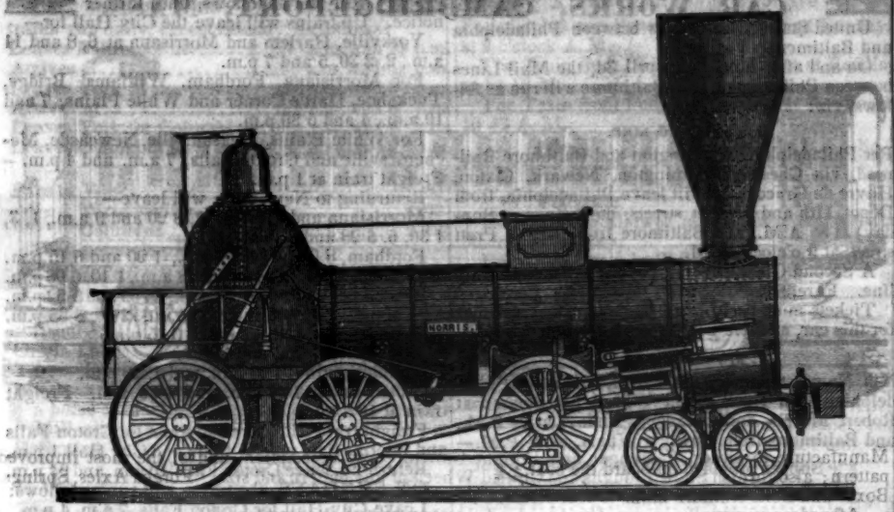
Orders for these Chimneys and Arresters, addressed to the subscribers, care Messrs. Baldwin & Whitney, of this city, will be promptly executed.
FRENCH & BAIRD.

N. B.—The subscribers will dispose of single rights, or rights for one or more States, on reasonable terms.
Philadelphia, Pa., April 6, 1844.

*** The letters in the figures refer to the article given in the *Journal* of June, 1844. ja45

NORRIS' LOCOMOTIVE WORKS.

BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,



THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size.

Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS' BROTHERS.

MACHINE WORKS OF ROGERS, Ketchum & Grosvenor, Patterson, N. J. The undersigned receive orders for the following articles, manufactured by them of the most superior description in every particular. Their works being extensive and the number of hands employed beinglarge, they are enabled to execute both large and small orders with promptness and despatch.

Railroad Work.

Locomotive steam engines and tenders; Driving and other locomotive wheels, axles, springs & flange tires; car wheels of cast iron, from a variety of patterns, and chills; car wheels of cast iron with wrought tires; axles of best American refined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery

of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and Millwright work generally; hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR,

Paterson, N. J., or 60 Wall street, N. York.

PIG AND BLOOM IRON.—THE SUBSCRIbers are agents for the sale of numerous brands of Charcoal and Anthracite Pig Iron, suitable for Machinery, Railroad Wheels, Chains, Hollowware, etc. Also several brands of the best Puddling Iron, Juniatta Blooms suitable for Wire, Boiler Plate, Axe Iron, Shovels, etc. The attention of those engaged in the manufacture of Iron is solicited by

A. WRIGHT & NEPHEW,

12tf Vine St. Wharf, Philadelphia.

T. & C. WASON, Manufacturers of every style of Freight and Baggage Cars.—Forty rods east of the depot, Springfield, Mass.

Running parts in sets complete, Wheels, Axles, or any part of cars furnished and fitted up at short notice and in the best manner.

N.B. Particular attention paidto the manufacture of the *most improved* Freight Cars. We refer to the New Haven, Hartford and Springfield; Connecticut River; Harlem; Housatonic, and Western, Mass., Railroads, where our cars are now in constant use.

Dec.25, 1847.—1y.

SPRING STEEL FOR LOCOMOTIVES, Tenders and Cars. The Subscriber is engaged in manufacturing Spring Steel from ¼ to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used, its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address

JOAN F. WINSLOW, *Agent*,

1y Albany Iron and Nail Works,

IMPORTANT TO ENGINEERS, CONtractors, and Surveyors.—The Engineer's, Contractor's and Surveyor's Pocket Table Book, by J. M. Scribner, A. M., 264 pages, 24 mo; tuck binding, with gilt edge. Published by Huntington & Savage, 216 Pearl street, New York.

The above work comprises Logarithms of Numbers, Logarithmic Sines and Tangents, Natural Sines and Natural Tangents; the Traverse Table, and a full and extensive set of tables, *exhibiting at one view the number of cubic yards contained in any embankment or cutting, and, for any base or slope of sides usual in practice.* Besides these essential tables, the work comprises 50 pages more of Mensuration, Tables, Weights of Iron, Strength of Materials, Formulas, Diagrams, etc., for laying out railroads, canals and curves; much of which has never before been offered to the public, and all dispensable to the engineer. This book will prove a great saving of time, and will enable the new beginner to furnish results as accurately (and with much greater rapidity) as the most experienced in the profession without its aid. The tables of Logarithms, etc., have been carefully corrected and compared with *different* editions of the same tables; and *all* the tables throughout the book have been read carefully by proofs four times; hence the most implicit confidence may be placed in their correctness.

Also, *Scribner's Engineer's and Mechanic's Companion*, new edition, 264 pages, enlarged with 35 pages of entirely new matter, and much improved throughout.

It is believed these books are so well adapted to suit the above professions, that they cannot *afford* to do without them, and that they will aid in rewarding well directed mental labor.

Both are for sale by all the principal booksellers throughout the United States and Canada.

WESTERN RAILROAD.—ON AND AFter Monday, April 5, 1847, the passenger trains will leave daily, Sundays excepted, as follows:

Boston at 8 a. m. and 4 p. m. for Albany.

Albany at 7 1-4 a. m. and 5 p. m. for Boston.

Springfield at 8 1-2 a. m. and 1 p. m. for Albany

Springfield at 8 1-2 a. m. and 1 1-2 and 3 p. m. (or on arrival of the train from New York) for Boston.

Day line to New York, via Springfield.—The steamboat train leaves Boston at 6 a. m. and arrives in New York at 7 p. m., by the steamboats Traveller, New York, or Champion. Returning, leaves New York at 6 1-4 a. m., and arrives in Boston at 7 p. m.

Night line to New York.—Leaves Boston at m., and arrives in New York at 5 a. m.

Albany and Troy.—Leave Boston at 8 a. m., Springfield at 1 p. m., and arrive in Albany at 6p. m.; or, leave Boston at 4 p.m., Springfield next morning at 8 1-2, and arrive in Albany at 1 1-2 p.m.

The Troy trains connect at Greenbush.

The trains for Buffalo leave at 7¼ a.m. and 7 p.m.

For Northampton, Greenfield, etc.—The trains of the Connecticut River Railroad leave Springfield at 9 1-4 a.m., 1 and 3 p.m., and passengers proceed directly on to Bratleboro', Windsor, Bellows Falls, Walpole, Hanover, Haverhill, etc.

For Hartford.—The trains leave Springfield on the arrival of the trains from Boston.

The trains of Pittsfield and North Adams Railroad leave Pittsfield on the arrival of the trains from Boston.

N. B.—No responsibility assumed for any baggage by the passenger trains, except for wearing apparel not exceeding the value of fifty dollars, unless by special agreement.

JAMES BARNES, Sup't and Eng'r.

C A. SEAD, Agent, 27 State street, Boston.

GEORGIA RAILROAD. FROM AUGUSTA to ATLANTA—171 MILES.

AND WESTERN AND ATLANTIC RAILROAD FROM ATLANTA TO DALTON, 100 MILES.

This Road in connection with the South Carolina Railroad and Western and Atlantic Railroad now forms a continuous line, 408 miles in length, from Charleston to Dalton (Cross Plains) in Murray county, Ga.—32 miles from Chattanooga, Tenn.

RATES OF FREIGHT.		Between Augusta and Dalton. 271 miles.	Between Charleston and Dalton. 408 miles.
1st class.	Boxes of Hats, Bonnets, and Furnature, per cubic foot	$0 18	$0 28
2d class.	Boxes and Bales of Dry Goods, Sadlery, Glass, Paints, Drugs and Confectionary, per 100 lbs.	1 00	1 50
3d class.	Sugar, Coffee, Liquor, Bagging, Rope, Cotton Yarns, Tobacco, Leather, Hides, Copper, Tin, Feathers, Sheet Iron, Hollow Ware, Castings, Crockery, etc.	0 60	0 85
4th class.	Flour, Rice, Bacon, Pork, Beef, Fish, Lard, Tallow, Beeswax, Bar Iron, Ginseng, Mill Gearing, Pig Iron, and Grindstones, etc.	0 40	0 6$\frac{1}{2}$
	Cotton, per 100 lbs	0 45	0 7$\frac{1}{2}$
	Molasses, per hogshead	8 50	13 50
	" " barrel	2 50	4 25
	Salt per bushel	0 18	
	Salt per Liverpool sack	0 65	
	Ploughs, Corn Shellers, Cultivators, Straw Cutters, Wheelbarrows	0 75	1 50

German or other emigrants, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Co. will be forwarded free of commissions. Freight payable at Dalton.

F. C. ARMS,
Sup't. of Transportation.

Augusta, Ga., July 15, 1847. 44•1y

THE WESTERN AND ATLANTIC

Railroad.—This Road is now in operation to Oothcaloga, a distance of 80 miles, and connects daily (Sundays excepted) with the Georgia Railroad.

From Kingston, on this road, there is a tri-weekly line of stages, which leave on the arrival of the cars on Tuesday, Thursday and Saturday, for Warrenton, Huntsville, Decatur and Tuscumbia, Alabama, and Memphis, Tennessee.

On the same days, the stages leave Oothcaloga for Chattanooga, Jasper, Murfreesborough, Knoxville and Nashville, Tennessee.

This is the most expeditious route from the east to any of these places.

CHAS. F. M. GARNETT,
Chief Engineer.

Atlanta, Georgia, April 16th, 1846 1v1

CENTRAL RAILROAD—FROM SAVANNAH to Macon. Distance 190 miles.

This Road is open for the transportation of Passengers and Freight. Rates of Passage, $8 00. Freight—

On weight goods generally	50 cts. per hundred.
On measurement goods	13 cts. per cubic ft.
On brls. wet (except molasses and oil)	$1 50 per barrel.
On brls. dry (except lime)	80 cts. per barrel.
On iron in pigs or bars, castings for mills, and unboxed machinery	40 cts. per hundred
On hhds. and pipes of liquor, not over 120 gallons	$5 00 per hhd.
On molasses and oil	$6 00 per hhd.

Goods addressed to F. WINTER, Agent, forwarded free of commission.

THOMAS PURSE,
Gen'l. Sup't. Transportation.

y49

PHILADELPHIA, WILMINGTON & BALTIMORE RAILROAD.—1848.

SUMMER ARRANGEMENT.

United States Mail Lines between Philadelphia and Baltimore. Fare, $3.

On and after Monday, April 3d, the Mail Lines between Philadelphia and Baltimore will run as follows, viz:

MORNING LINE.

Per Philadelphia, Wilmington and Baltimore Railroad, via Chester, Wilmington, Newark, Elkton, Havre de Grace, etc., will leave Philadelphia, from Depot, 11th and Market streets, daily (except Sunday) at 8$\frac{1}{2}$ A.M., and Baltimore from Depot, Pratt street, at 9 o'clock, A.M.

A Second Class Car will be run with the morning line. Fare, $2.

Tickets must positively be procured at the Office for this car, as none will be sold by the conductors.

AFTERNOON LINE.

Via Newcastle and Frenchtown, will leave Philadelphia, from Dock Street Wharf, per Steamboat Robert Morris, daily (except Sunday) at 2$\frac{1}{2}$ P.M., and Baltimore, from Bowly's Wharf, at 2$\frac{1}{2}$ P.M.—

☞ Supper provided on board the boat. ☜

NIGHT LINE.

Per Philadelphia, Wilmington and Baltimore Railroad, will leave Philadelphia, from depot, 11th and Market streets, daily, at 11 P.M., and Baltimore at 8 P.M.

WHEELING AND PITTSBURG.

Tickets through to Wheeling or Pittsburg, can be procured at the depot, or on board of the steamboat. Fare to Wheeling, $13. Fare to Pittsburg, $12.

The trains leave Baltimore for the west at 7 A.M. and 4 P.M.

SUNDAY MAIL LINE.

The only line for Baltimore on Sunday leaves the depot, 11th and Market streets, at 10 P.M.

Passengers for these lines must procure their Tickets at the office before taking their seats in the cars.

NOTICE.—All Baggage by these lines is at its owner's risk, and passengers are expressly prohibited taking anything as baggage, except their wearing apparel. 50 lbs. baggage allowed each passenger.

WILMINGTON ACCOMMODATION TRAINS.

On and after Monday, April 3d, the Accommodation Trains, stopping at all the intermndiate places between Philadelphia and Wilmington, will leave as follows, viz:

Leave Philadelphia, from depot 11th and Market streets, daily (Sundays excepted) at 1$\frac{1}{2}$ and 4 P. M.

Leave Wilmington, from the depot, Water street, daily (except Sunday) at 7$\frac{1}{2}$ A.M. and 4$\frac{1}{2}$ P.M.

The Freight Accommodation Train will leave Philadelphia at 7 P.M. and Wilmington at 7 P.M.

The Mail Trains stopping at Chester and Wilminton, leave Philadelphia at 8$\frac{1}{2}$ A.M. and 10 P.M. Wilmington at 1 o'clock, P.M., and 12 midnight. Fare to Wilmington, 50 cts. Fare to Chester, 25 cts.

G. H. HUDDELL, *Agent.*

March 23, 1848. 1y15

☞ NOTICE. ☜

RAILROAD LINE BETWEEN ALBANY AND BUFFALO, N. Y.

1848.—SCHEDULE FOR RUNNING.—1848.

Going west.	1st train.	2d train.	3d train
Leaves....Albany	7$\frac{1}{2}$ A.M.	2 P.M.	7 P.M.
Pass.....Utica	1 P.M.	7$\frac{1}{2}$ P.M.	1$\frac{1}{2}$ A.M.
Pass.....Syracuse	4$\frac{1}{2}$ P.M.	11 P.M.	5 A.M.
Pass.....Auburn	6$\frac{1}{2}$ P.M.	1 A.M.	7 A.M.
Pass.....Rochester	12$\frac{1}{2}$ M.N.	7 A.M.	1 P.M.
Arrives at Buffalo	5$\frac{1}{2}$ A.M.	12 M.	6 P.M.

Going east.	1st train.	2d train.	3d train.
Leaves....Buffalo	7$\frac{1}{2}$ A.M.	2 P.M.	7 P.M.
Pass.....Rochester	12$\frac{1}{2}$ M.	7 P.M.	12 M.N.
Pass.....Auburn	6$\frac{1}{2}$ P.M.	1 A.M.	6 A.M.
Pass.....Syracuse	8$\frac{1}{2}$ P.M.	3$\frac{1}{2}$ A.M.	8 A.M.
Pass.....Utica	12 M.N.	7 A.M.	11$\frac{1}{2}$ A.M.
Arrives at Albany	5 A.M.	12 M.	4$\frac{1}{2}$ P.M.

Adopted February 18, 1848, in convention at Albany. (Copy.)

T. Y. HOWE, Jr.,
Secretary of the Convention.

NEW YORK & HARLEM RAILROAD CO.—Summer Arrangement.—On and after

Tuesday, June 1st, 1847, the cars will run as follows, until further notice. Up trains will leave the City Hall for—

Yorkville, Harlem and Morrisana at 6, 8 and 11 a.m., 2, 2 30, 5 and 7 p.m.

For Morrisiana, Fordham, Williams' Bridge, Tuckahoe, Hart's Corner and White Plains, 7 and 10 a.m., 4 and 5 30 p.m.

For White Plains, Pleasantville, Newcastle, Mechanicsville and Croton Falls, 7 a.m. and 4 p.m.—Freight train at 1 p.m.

Returning to New York, will leave—

Morrisiana and Harlem, 7, 8 20 and 9 a.m., 1, 3, 4 30, 6, 6 28 and 8 p.m.

Fordham, 8 08 and 9 15 a.m., 1 20 and 6 15 p.m.

Williams Bridge, 8 and 9 08 a.m., 1 10, 6 08 p.m.

Tuckahoe, 7 38 and 8 25 a.m., 12 55 and 5 52 p.m.

White Plains, 7 10 and 8 35 a.m., 12 50, 5 35 p.m.

Pleasantville, 8 15 a.m. and 5 15 p.m.

Newcastle, 8 a.m. and 5 p.m.

Mechanicsville, 7 48 a.m. and 4. 48 p.m.

Croton Falls, 7 30 a.m. and 4 30 p.m. Freight train at 10 a.m.

Freight train will leave 32d street for Croton Falls and intermediate places, 4 a.m and City Hall 1 p.m.

Returning, leave Croton Falls 10 a.m. and 9$\frac{1}{2}$ p.m.

ON SUNDAYS, the trains will run as follows:

Leave City Hall for Croton Falls, 7 a.m, 4 p.m.

Croton Falls for City Hall, 7 30 a.m., 4 30 p.m.

Leave City Hall for White Plains and intermediate places, 7 and 10 a.m. 4 and 5 30 p.m.

White Plains for City Hall, 7 10 and 8 35 a.m., 12 30 and 5 35 p.m.

Extra trains will be run to Harlem, Fordham and Williams Bridge on Sunday, when the weather is fine.

The trains to and from Croton Falls will not stop on N. York island, except at Broome st. and 32d st.

A car will proceed each train 10 minutes to take up passengers in the city.

Fare from New York to Croton Falls and Somers $1, to Mechanicsville 87$\frac{1}{2}$c., to Newcastle 75c., to Pleasantville 62$\frac{1}{2}$c., to White Plains 50c. 25tf

BOSTON AND MAINE RAILROAD.

Upper Route, to Portland and the East.

Summer Arrangement.

Commencing July 3d, 1848.

Trains leave Boston as follows, viz:

For Portland at 7 A.M. and 2$\frac{1}{2}$ P.M.

For Great Falls at 7 a.m., 2$\frac{1}{2}$ and 4$\frac{1}{2}$ p.m.

For Haverhill at 7 and 11$\frac{1}{2}$ a.m., 2$\frac{1}{2}$, 4$\frac{1}{2}$ and 6 p.m.

For Lawrence, at 7, 9, 11$\frac{1}{2}$ a.m., 2$\frac{1}{2}$, 4$\frac{1}{2}$, 6, 7 p.m.

For Reading 7, 9 & 11$\frac{1}{2}$ a.m., 2$\frac{1}{2}$, 4$\frac{1}{2}$, 6, 7, 8$\frac{1}{2}$ & 10 p.m

Trains leave for Boston as follows, viz:

From Portland at 7$\frac{1}{2}$ a.m., and 3 p.m.

From Great Falls at 6$\frac{1}{2}$ and 9$\frac{1}{2}$ a.m., and 4$\frac{1}{2}$ p.m.

From Haverhill at 7, 8$\frac{1}{2}$ and 11 a.m., 3$\frac{1}{2}$ and 6$\frac{1}{2}$ p.m.

Lawrence at 6$\frac{1}{2}$, 7$\frac{1}{2}$, 8$\frac{1}{2}$, 11$\frac{1}{2}$ a.m., 12$\frac{1}{2}$, 3$\frac{1}{2}$, 6$\frac{1}{2}$, p.m.

Reading at 6, 6$\frac{1}{2}$, 7$\frac{1}{2}$, 9$\frac{1}{2}$, 11$\frac{1}{2}$ a.m., 1, 4, 7$\frac{1}{2}$, 9, 10 p.m.

MEDFORD BRANCH TRAINS.

From Boston at 6·50, 9$\frac{1}{2}$ a.m., 12$\frac{1}{2}$ 2$\frac{1}{2}$, 5$\frac{1}{2}$, 7, 10 p.m.

From Medford at 6·10, 7$\frac{1}{2}$, 10$\frac{1}{2}$, a.m., 2, 4, 6$\frac{1}{2}$, 9$\frac{1}{2}$ p.m.

STEAMBOAT TRAINS.

For BANGOR, every Monday, Wednesday and Friday, at 5 p.m.

For HALLOWELL, every Tuesday, Thursday & Saturday, at 7 a.m.

The Depot in Boston is on Haymarket Square.

CHAS. MINOT, *Sup't.*

Boston, July 3d, 1848.

BOSTON AND PROVIDENCE RAILroad. Summer Arrangement. On and after

Monday, April 3, 1848, the Trains will run as follows:

Steamboat Train—Leaves Boston daily, except Sunday, at 5 o'clock p.m.

Accommodation Trains—Leave Boston at 7 and 11 a.m. and 4 p.m., and Providence at 7$\frac{1}{2}$ and 11 a.m. and 4$\frac{1}{2}$ p.m.

Pawtucket Train—Leaves Boston at 4 p.m. and Pawtucket at 7, 10 a.m.

Dedham Trains—Leave Boston at 8 a.m., and 12$\frac{1}{2}$ 3$\frac{1}{2}$, 6$\frac{1}{2}$ and 9 p.m. Leave Dedham at 7 and 9$\frac{1}{2}$ a.m. and 2$\frac{1}{2}$, 5$\frac{1}{2}$ and 8 p.m.

Stoughton Trains—Leave Boston at 11$\frac{1}{2}$ a.m. and 5$\frac{1}{2}$ p.m. Leave Stoughton at 7, 10 a.m. and 3$\frac{1}{2}$ p.m.

WM. RAYMOND LEE, *Sup't.*

BALTIMORE AND SUSQUEHANNA Railroad.—Reduction of Fare. Morning and Afternoon Trains between Baltimore and York.—The Passenger trains run daily, except Sunday, as follows:

Leaves Baltimore at.....9 a.m. and 3½ p.m.
Arrives at.....9 a.m. and 6½ p.m.
Leaves York at.....5 a.m. and 3 p.m.
Arrives at.....12½ p.m. and 8 p.m.
Leaves York for Columbia at..1½ p.m. and 8 a.m.
Leaves Columbia for York at..8 a.m. and 2 p.m.

FARE.

Fare to York.....$1 50
" Wrightsville.....2 00
" Columbia.....2 12½
Way points in proportion.

PITTSBURG, GETTYSBURG AND HARRISBURG.

Through tickets to Pittsburg via stage to Harrisburg.....$9
Or via Lancaster by railroad.....10
Through tickets to Harrisburg or Gettysburg..3
In connection with the afternoon train at 3½ o'clock, a horse car is run to Green Spring and Owing's Mill, arriving at the Mills at.....5½ p.m.
Returning, leaves Owing's Mills at.....7 a.m.

D. C. H. BORDLEY, *Sup't.*
31 1y Ticket Office, 63 North st.

BALTIMORE AND OHIO RAILROAD. MAIN STEM. The Train carrying the Great Western Mail leaves Baltimore every morning at 7½ and Cumberland at 8 o'clock, passing Ellicott's Mills, Frederick, Harpers Ferry, Martinsburgh and Hancock, connecting daily each way with—the Washington Trains at the Relay House seven miles from Baltimore, with the Winchester Trains at Harpers Ferry—with the various railroad and steamboat lines between Baltimore and Philadelphia and with the lines of Post Coaches between Cumberland and Wheeling and the fine Steamboats on the Monongahela Slack Water between Brownsville and Pittsburgh. Time of arrival at both Cumberland and Baltimore 5½ P. M. Fare between those points $7, and 4 cents per mile for less distances. Fare through to Wheeling $11 and time about 36 hours, to Pittsburgh $10, and time about 32 hours. Through tickets from Philadelphia to Wheeling $13, to Pittsburgh $12. Extra train daily except Sundays from Baltimore to Frederick at 4 P. M., and from Frederick to Baltimore at 8 A. M.

WASHINGTON BRANCH.

Daily trains at 9 A. M. and 5 P. M. and 12 at night from Baltimore and at 6 A. M. and 5½ P. M from Washington, connecting daily with the lines North, South and West, at Baltimore, Washington and the Relay house. Fare $1 60 through between Baltimore and Washington, in either direction, 4 cents per mile for intermediate distances. s13y1

NORWICH AND WORCESTER RAILROAD. Summer Arrangement.—1848.

Accommodation Trains daily, (Sundays excepted.)

Leave Norwich, at 6 a. m., 12 m. and 5 p. m.
Leave Worcester, at 6½ and 10 a. m., and 4½ p. m. connecting with the trains of the Boston and Worcester and Providence and Worcester railroads.

New York & Boston Line. Railroad & Steamers. Leave New York and Boston, daily, Sundays excepted, at 5 p.m.—At New York from pier No. 1 N. River.—At Boston from corner Lincoln and Beach streets, opposite United States Hotel. The steamboat train stops only at Framingham, Worcester, Danielsonville and Norwich.

Freight Trains leave Norwich and Worcester daily, Sundays excepted.—From Worcester at 6½ a. m., from Norwich at 7 a.m.

☞ *Fares are Less when paid for Tickets than when paid in the Cars.* ☜

32 1y S. H. P. LEE, Ja., Sup't.

RAILROAD IRON—2500 TONS HEAVY H Rail, now landing, and expected shortly to arrive, for sale on most favorable terms by

DAVIS BROOKS & CO.
July 19/A, 1f 68 Broad street, New York.

PHILADELPHIA AND READING RAILROAD.—Passenger Train Arrangement for

1848.

A Passenger Train will leave Philadelphia and Pottsville daily, except Sundays, at 9 o'clock A. M.

The Train from Philadelphia arrives at Reading at 12 18 M.

The Train from Pottsville arrives at Reading at 10 43 A. M.

Fares.	Miles.	No. 1.	No. 2.
Between Phila. and Pottsville,	92	$3·50 and	$3·00
" " Reading,	58	2·25 and	1·90
" Pottsville "	34	1·40 and	1·20

Five minutes allowed at Reading; and three at other way stations.

Passenger Depot in Philadelphia corner of Broad and Vine streets. 8tf

SOUTH CAROLINA RAILROAD.—A Passenger Train runs daily from Charleston, on the arrival of the boats from Wilmington, N. C., in connection with trains on the Georgia, and Western and Atlantic Railroads—and by stage lines and steamers connects with the Montgomery and West Point, and the Tuscumbia Railroad in N. Alabama.

Fare through from Charleston to Montgomery daily.....$26 50
Fare through from Charleston to Huntsville, Decatur and Tuscumbia.....29 00

The South Carolina Railroad Co. engage to receive merchandize consigned to their order, and to forward the same to any point on their road; and to the different stations on the Georgia and Western and Atlantic railroad; and to Montgomery, Ala., by the West Point and Montgomery Railroad.

r25 JOHN KING, Jr, *Agent.*

CENTRAL AND MACON AND WESTern Railroads, Ga.—These Roads with the Western and Atlantic Railroad of the State of Georgia, form a continuous line from Savannah to Oothcaloga, Ga., of 371 miles, viz;

	Miles.
Savannah to Macon—Central Railroad	190
Macon to Atlanta—Macon and Western	101
Atlanta to Oothcaloga—Western and Atlantic	80

Goods will be carried from Savannah to Atlanta and Oothcaloga, at the following rates, viz:

	To Atlanta.	To Oothcaloga.
On Weight Goods—Sugar, Coffee, Liquor, Bagging, Rope, Butter, Cheese, Tobacco, Leather, Hides, Cotton Yarns, Copper, Tin, Bar & Sheet Iron, Hollow Ware & Castings	$0 50	$0 75
Flour, Rice, Bacon in Casks or boxes, Pork, Beef, Fish, Lard, Tallow, Beeswax, Mill Gearing, Pig Iron and Grind Stones	0 50	0 62½
On Measurement Goods—Boxes of Hats, Bonnets and Furniture, per cubic foot	0 20	0 26
Boxes and Bales of Dry Goods, Saddlery, Glass, Paints, Drugs and Confectionary, per cubic foot	0 20 pr. 100lbs.	35
Crockery, per cubic foot	0 15 " "	35
Molasses and Oil, per hhd., (smaller casks in proportion).	9 00	12 50
Ploughs, (large,) Cultivators, Corn Shellers, and Straw Cutters, each	1 25	1 50
Ploughs, (small,) and Wheelbarrows	0 80	1 05
Salt, per Liverpool Sack	0 70	0 95

Passage—Savannah to Atlanta, $10; Children, under 12 years of age, half price, Savannah to Macon, $7.

☞ Goods consigned to the subscriber will be forwarded free of Commissions.

☞ Freight may be paid at Savannah, Atlanta or Oothcaloga.

F. WINTER, *Forwarding Agent, C. R. R.*
Savannah, Aug. 15th, 1846. 1y34

NEW YORK ANDERIE RAILROAD LINE. SUMMER ARRANGEMENT. For passengers, twice each way daily, (except Sunday,) leave New York from the foot of Duane St. at 7 o'clock, A. M. and at 4 o'clock, P. M. by steamboat, for Piermont, thence by cars to Ramapo, Monroe, Chester, Goshen, Middletown, Otisville, and the intermediate stations.

The return trains for New York will leave Otisville at 6 30, A. M. and 4 15, P. M.; Middletown at 7 A. M. and 4 40, P. M.; Goshen at 7 22, A. M. and 5 3, P. M.; Chester at 7 35, A. M. and 5 18, P. M.

Fare between New York and Otisville, $1 50; way-fare in proportion.

For Milk—Leave Otisville at 5½ o'clock, morning and evening.

For Freight—The barges "Samuel Marsh and "Henry Suydam, Jr." will leave New York (from the foot of Duane St.) at 5 o'clock, P. M. daily (except Sundays.)

No freight will be received in New York after 5 o'clock, P. M.

Freight for New York will be taken by the trains eaving Otisville at 10½ o'clock, A. M.; Middletown at 11½, A. M.; Goshen at 12½, P. M.; Chester at 1 o'clock, P. M., etc., etc.

For farther particulars, apply to J. F. CLARKSON, Agent, corner of Duane and West Sts., New York, or to S. S. POST, Superintendent Transportation, Piermont.

24tf H. C. SEYMOUR, Sup't.

LITTLE MIAMI RAILROAD COMPANY. Fall and Winter Arrangement, 1847. On and after Monday, September 20th, until further notice, a Passenger train will run as follows:

Leave Cincinnati daily at 9 A. M., for Milford, Foster's Crossing, Deerfield, Morrow, Fort Ancient, Freeport, Waynesville, Spring Valley, Xenia, Yellow Springs, and Springfield. Returning, will leave Springfield at 4½ a.m. Upward train arrives at Springfield at 2½ p.m. Downward train arrives at Cincinnati at 10½ a.m.

Freight trains will run each way daily.

Messrs. Neil, Moore & Co. are running the following stage lines in connection with the road:

A daily line from Xenia to Columbus and Wheeling, carrying the great Eastern mail.

Daily lines from Springfield to Columbus, Zanesville and Wheeling. Also to Urbana and Bellefontaine.

A line of Hacks runs daily in connection with the train between Deerfield and Lebanon.

Passengers leaving for New York and Boston, arrive at Sandusky city via Urbana, Bellefontaine & the Mad River and Lake Erie railroad, in 27 hours, including several hours' sleep at Bellefontaine. To the same point via Columbus, Delaware, Mansfield and the Mansfield and Sandusky city railroad, in 33 hours. Distance from Cincinnati to Springfield by railroad.....84 miles.
From Springfield to Bellefontaine by stage, over a good Summer road.....32 "
From Bellefontaine to Sandusky city by railroad.....103 "

FARE—From Cincinnati to Lebanon....$1 00
" " " Xenia.....1 50
" " " Springfield..2 00
" " " Columbus...4 00
" " " Sandusky city 7 00

The Passenger trains runs in connection with Strader & Gorman's line of Mail Packets to Louisville.

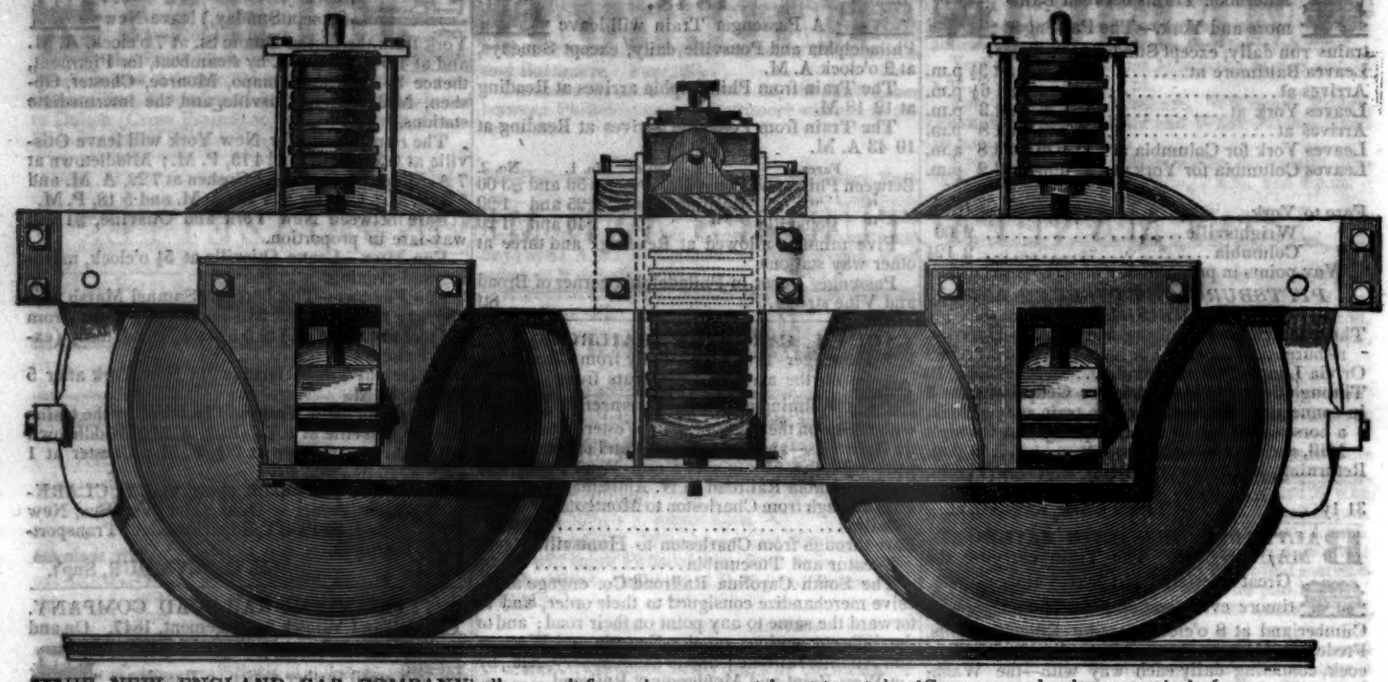
Tickets can be procured at the Broadway Hotel, Dennison House, or at the Depot of the Company on East Front street.

Further information and through tickets for the Stage lines, may be procured at P. Campbell, Agent on Front street, near Broadway.

The company will not be responsible for baggage beyond 50 dollars in value, unless the same is returned to the conductor or agent, and freight paid at of a passage for every $500 in value over that amount.

47tf W. H. CLEMENT, *Sup't.*

VULCANIZED INDIA RUBBER CAR SPRINGS.



THE NEW ENGLAND CAR COMPANY have introduced these Springs, and they are now in operation on every Railroad terminating in Boston, and several others in New England and the Middle States. Their qualities are well understood, or may be readily ascertained by every person interested to know them. They require no recommendation from the Company. The only known compound of India Rubber good for anything for this purpose is the Vulcanized India Ruhber, invented by Charles Goodyear, of New Haven, and the application of it, and the form in which it is used, were invented by F. M. Ray, of New York. The right to manufacture and sell the substance itself for the purpose of Railroad Carriage Springs, as well as the form and application of it, are held exclusively by the New England Car Company. No other company, or individual, has any right to sell or use it for such purpose, or has attempted so to use it in this country.

The New England Car Company guarantee the right to use the article they sell for Railroad Carriage Springs only, against all adverse rights, whether under patents or otherwise: and all persons and corporations are cautioned against a similar use of the article, when purchased of any other parties.

The Springs they sell are all manufactured in a uniform manner, and under the immediate inspection of their own Agent, and have been proved and known to answer the purpose. None have been manufactured in this country or imported from abroad beside their own, which would at all answer the purpose; and if any such should be produced, it cannot be used for Car Springs, while Goodyear's patents, and the rights of the New England Car Company under them, remain in force.

The New England Car Company are now prepared to answer orders for all that may be called for, on reasonable notice, and uniform and equitable terms. They invite the most careful examination, and the severest scrutiny, into the merits of their Springs, wherever they have applied them. And if after such examination, your Company should judge it for their interest to adopt them, the N. E. Car Company would respectfully invite the patronage which they think they deserve, and are confident of receiving at your hands.

EDWARD CRANE, *Agent*,
Office 99 State street.

Orders may also be left with F. M. RAY, 100 Broadway, or with WM. RIDER & BROTHERS, No. 58 Liberty street, New York.

Boston, June, 1848.

LAP—WELDED
WROUGHT IRON TUBES
FOR
TUBULAR BOILERS,
FROM 1 1-2 TO 8 INCHES DIAMETER.

These Tubes are of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER,
Patentee.
28 Platt street, New York.

LAP-WELDED WROUGHT IRON TUBES for Tubular Boilers, from 1¼ to 15 inches diameter, and any length not exceeding 17 feet—manufactured by the Caledonian Tube Company, Glasgow, and for sale by

IRVING VAN WART,
12 Platt street, New York.
JOB CUTLER, Patentee.

These Tubes are extensively used by the British Government, and by the principal Engineers and Steam Marine and Railway Companies in the Kingdom. 9tf

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EDMUND DRAPER,
Surviving partner of
STANCLIFFE & DRAPER.

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1y10 near Third, Philadelphia.

DEAN, PACKARD & MILLS,
MANUFACTURERS OF ALL KINDS OF
RAILROAD CARS,
SUCH AS
PASSENGER, FREIGHT AND CRANK CARS,
—ALSO—
SNOW PLOUGHS AND ENGINE TENDERS
OF VARIOUS KINDS.
CAR WHEELS and AXLES fitted and furnished at short notice; also, STEEL SPRINGS of various kinds; and
SHAFTING FOR FACTORIES.

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REUEL DEAN,
ELIJAH PACKARD, } SPRINGFIELD, MASS.
ISAAC MILLS, 1y48

AMERICAN RAILROAD JOURNAL.
OFFICE AT THE FRANKLIN HOUSE,
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This is the only periodical having a general circulation throughout the Union, in which all matters connected with public works can be brought to the notice of all persons in any way interested in these undertakings. Hence it offers peculiar advantages for advertising times of departure, rates of fare and freight, improvements in machinery, materials, as iron, timber, stone, cement, etc. It is also the best medium for advertising contracts, and placing the merits of new undertakings fairly before the public.

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One page, single insertion	8 00
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One square " "	1 00
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☞ LETTERS and COMMUNICATIONS for this Journal may be directed to the *Editor*,
D. K. MINOR.